U R B A N SENSORY PARK

DESIGN FACILITATING CHILDREN WITH DISIBILITIES

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5 yr BLA

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Fig. 1 | **SENSE OF SEEING ICON**

Fig. 2 | **SENSE OF SMELLING ICON**

Fig. 3 | **SENSE OF TASTING ICON**

Fig. 4 | **SENSE OF TOUCHING ICON**

Fig. 5 | **SENSE OF HEARING ICON**

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Urban Sensory Park

Design Facilitating Children with Disabilities

Undergraduate Thesis Proposal
Bachelors of Landscape Architecture

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LA 404 Final Comprehensive Project
Department of Landscape Architecture
College of Architecture and Planning
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By Kyla M. Scheuermann

Fig. 7 | **CHILD IN WHEEL CHAIR PHOTOGRAPH**

Abstract

This comprehensive project designed an urban sensory park where children with disabilities are comfortably enveloped by an outdoor environment providing interactive enlightenment.

It compiled research on therapeutic gardens, child playgrounds, accessibility needs and related professional studies into an urban design focusing on the interaction of children displaying physical and mental disabilities. The final park layout, built on under-used lot space, personally benefits child development and their environmental involvement through art installations, spatial definition, and interactive play equipment. The park as well as benefitting its focused users, children with disabilities, also had a secondary motive to benefitting the surrounding urban community with its safe and colorful habitat.

The design project was successful. Design solutions were generated which helped to alleviate current problems of under-use, lack of identity, and lack of park space. The researched effectiveness of his project was developed to serve as an exemplary implementation and guidelines for an urban park unique to special needs children.

Acknowledgements

The creation of this comprehensive project thesis document was a product of a ten month process achieved by advanced research, community involvement, thorough site analysis, planning and create design. It serves as a very unique and intuitive case study where therapeutic design is publicized and maximized for the accessibility of all users.

Special credit is given to former Professor Ronald Spangler for his guidance and wisdom over the past years and semester; and my family for their support in my education and every other aspect of my life. Special thanks to my late father who fed my ambitions and was/is their in every decision making process.

Finally thanks to my peers, professors and very close friends for their help, their advice and much needed spontaneity throughout my career at Ball State University.

Fig. 8 | **NATURE DISCOVERY PHOTOGRAPH**

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Introduction

According to Cornucopia of Disability Information (CODI) 43 million people are disabled in the world making almost one out of five persons having a disability. Fifteen percent of that 43 million were born with their disability. This is a striking census as many children with disabilities, who are the subjects for this thesis, are derived from this number.

Taking this statistic into account, the opportunities of this substantial group should be substantial as well. As an exemplary urban park that provides full capabilities to people with handicaps, this thesis project formed a solution to providing one of those many possible opportunities.

As a subgroup to people with disabilities and without defining levels of fulfillment, it could be considered that children with disabilities are given rare occasions to express their abilities outside of the classroom. Typical children have the opportunities of getting involved with after-school sports, clubs, fine arts programs, sleep overs, and so on, play major roles in stimulating them after school. Children with disabilities, however, are rarely offered the chance of doing activities outside because they are physically or psychologically unable, health reasons, limited transportation services, uninterested guardianship, the lack of an accessible park, lack of park proximity, etc . Certain organizations like Best Buddies, and Special Olympics do a great job in providing these children with similar outdoor activities and opportunities of meeting

other children, but the same issues could still prevent the child from participating.

With a park attributing features for their disabilities nearby, proximity, accessibility, transportation, etc. make little to no difference on whether the child's experience of the park, their disabilities turn into abilities. A park for the disabled, or sensory park, placed within a housing neighborhood and with many surrounding applicable schools becomes an ability park for all community members nearby. The children with disabilities are no longer set apart from other children because they can take ownership of a place where they have full inclusion, comprehension, and consolation.

A sensory park with accessible features as well as features like adjustable playground equipment, smooth paving, interactive features, nature walks, and seasonal changes also lead to a complete overall educational environment. An available environment where all children and age groups can go to after school or when school is not in session that is outdoors.

Fig. 9 | **CHILD AT PLAY PHOTOGRAPH**

Significance

This booklet addresses design issues for children with special needs and proposes a design that will act as a main exemplary piece. The proposed design include installations specific to each child's ability to provide these children opportunities to educationally interact with their environment. In hopes that the park inspires children through exploration and stimulating aesthetic qualities, ownership of the site will be acquired. And with that stewardship qualities found in doing things like caring for plants from seed to maturity, interacting with other children, discovering how to do an activity by one's self, etc. will parallel to qualities needed in life situations.

Sub-problems

The following are four main 'subproblems' supporting the problem statement:

1. Children experience parks in different ways than adults. Furthermore, people with special needs experience parks differently than people without special needs.
2. A park completely manageable for children with disabilities needs to be located for maximum use.
3. Environmental characteristics and playground equipment might be similar and/or different between children with disabilities and those without.
4. Physical and cognitive benefits, if any, will be drawn from the proposed.

Problem Statement

The project process addressed the development of a design solution where a sustainable urban park with heightened awareness toward children with disabilities is placed for the community of Indianapolis, Indiana. Research including environmental spatial qualities and play equipment needed for children from 5 to 14 years of age with disabilities will be obtained for the proposed urban park. The placement of the park should not only coincide with the local placement of children but better the community according to its placement as well. By conducting thorough research, applying textural art installations, exposing natural systems and allowing for social interaction between the park and its users, results for enhancing physical and psychological development in the children and overall spatial benefits for the community were achieved.

Fig. 10 | **WALKING CHILD PHOTOGRAPH**

Goals & Objectives

1 Create a park focused on user wants and needs.

* Conduct questionnaires for community members.
* Limit project site to existing brownfields, vacant lots, and run-down or abused spaces.
* Heavily research children with disabilities (ages 5-14).
* Interview community members and all associated with the site.
* Interview professionals related to therapeutic design and dealing with children with special needs.
* Attend at least one community meeting.
* Prioritize performance and spatial uses.
* Coincide with ADA's Accessibility Guidelines.

2 Create a seasonal community entity.

* Provide ways of water treatment applicable for community member education as well as personal use.
* Disperse features where motor skills and cognitive skills are tested.
* Plan for park activities year round.

3 Allow for no separation between user abilities.

* Join handicap entrances with all entrances.
* Create multiple use features.
* Provide signs easily read by different age, mental, physical, and ethnic groups.

4 Provide a public healing environment.

* Apply characteristics of multiple therapeutic practices such as: Nature Therapy, Play Therapy, Art Therapy, Color Therapy, Light Therapy, Music Therapy and Horticultural Therapy.
* Integrate therapeutic characteristics into the plants pallet.

Assumptions

1. The plants schedule and park layout will be critical to the success of its users.

2. The uses for the urban park design will coincide with the uses of a therapeutic landscape, with primary focus on children with disabilities and secondary focus on the community.

3. The surrounding community will have full access and use of the park outside of children with disabilities.

Delimitations

1. The proposed urban park must be designed on a pre-existing park, a vacant lot, a brownfield site, or other under used lot.

2. This research addresses the needs of children with disabilities who are between the ages of 5 and 14 and is therefore only supported by such.

3. This study does not include sources of funding.

4. This study addresses children with disabilities unrelated to obesity or temporary illnesses.

"Subject to the provisions of this sub chapter, no qualified individual with a disability shall, by reason of such disability, be excluded from participation in or be denied the benefits of service, programs, or activities of a public entity, or by subjected to discrimination by any such entity."

This statement found in the *Americans with Disabilities Act of 1990*, both legitimizes and summarizes the basis for this thesis project document. It helped drive the project's resources to support a park that proves its self such an entity. Many other sources of literature helped to formulate the final design of the project. Four main categories for which the literature was needed are, finding examples of small to medium sized children parks, researching studies where environmental characteristics for children with disabilities were completed, understanding the placement of a children's park and its elements for children with disabilities, and separating all benefits from the proposed greenspace.

EXAMPLES OF SMALL TO MEDIUM SIZED CHILDREN'S PARKS

A place specially designed to meet the children's needs in both mind and body, as stated by Conway – Long, was designed outside the Children's Institute in California. New Dawn Garden Design a local firm, that designed the project began the process by creating focus groups comprised of therapists, educators, children, and parents. The groups were successful for getting feedback about ideas and wants for the new design. All of the ideas were collected and then used with the article depicting the design plan and accompanying captions (Conway-Long, 4).

Literature Review (continued)

The descriptive captions not only helped to understand various uses of the park but perceptively helped build excitement for the final implementation as well.

This design and process completed by New Dawn Garden Design was used as a major case study in this comprehensive project. Their examples for research, process, implementation, and creativity were looked to in producing the final design of the proposed children's park.

ENVIRONMENTAL CHARACTERISTICS FOR CHILDREN WITH DISABILITIES

The Children's Institute had two main concepts, stimulation and comfort, for their park design that would serve children with disabilities by observing children without disabilities. Stimulation addresses each child's education and senses; comfort refers to the child's mental stress level and physical access throughout the spaces. In order to successfully acquire types of stimulation and comforts needed for the mental stress of the child, The Center for Autism was studied. In the design of the Center for Autism, only physical and mental disabilities in correlation with autism and learning disabilities was assessed. This welcomed one of the major disabilities seen in children as autism, so it is necessary to understand the disease and finding the best solutions applicable to an urban park setting. *The Center for Autism* article primarily discusses the effects an indoor classroom environment has on the autistic child, which could be very applicable to a similar space outdoors. Controlled lighting is needed when keeping the children focused. Flickering or sounds from overhead lights have

tendencies to distract. By comparison, lights in parks tend to be an accessory added last by importance, but by using controlled lighting, like the indoor classroom, exterior lighting could be used as a sensory station. It might also be placed where more attention should be had, or as a means to direct an individual from one place to another. Uncontrolled acoustics are another means to avoid distraction and stress. While unique ceiling or wall panels would be installed indoors, design innovations involving white noise and structural or vegetated barriers would be beneficial outdoors (Alvino, 12).

Another informational resource on autism was an MLA thesis by Bonnie B. Hebert, *Design Guidelines of a Therapeutic Garden for Autistic Children*. In this a thorough explanation of the nature of autism is expressed, case studies and interviews with professionals tending autistic children and techniques that they use were shared. These two sections were the most beneficial in understanding autism and separately the child. Reading lesson plans and seeing examples of signs used for the children helped create the sensory park signs as well as providing insight on elements needed in proposed interactive installations.

PLACEMENT OF A CHILDREN'S WITH DISABILITIES PARK

Implementing a sensory place for children with disabilities may be highly used within an institutional environment, but a sensory place outdoors should be considered. Ismail Said, Head may be highly used within an institutional environment, but a sensory place outdoors should be considered. Ismail Said, Head may be

Literature Review (continued)

highly used within an institutional environment, but a sensory place outdoors should be considered. Ismail Said, Head of Research Children Therapeutic Garden in Malaysia, wrote about the designing of outdoor spaces for the healing process of children in his 2003 publication, *Design Considerations and Recommendations for the Development of Children Therapeutic Garden in Malaysian Hospitals*. The garden should:

- Be visible from many angles.
- Be very level so the participants can maneuver easily.
- Try to preserve natural features.
- Remain or become safe and secure from any unwanted activities.
- Have smooth circulation
- Contain thoughtfully selected plants with compositional foliage coloring and size, and with therapeutic influences.

All the above features describe very important concepts when designing a place for a high level of activity by those with disabilities. Said goes into detail about what was provided, why it was provided, and the different ways that feature might be used (Said, 1-9). Most if not all details were implemented.

POSSIBLE BENEFITS DRAWN FROM THE TRANSFORMED PUBLIC GREENSPACE

There are many different uses for features within a therapeutic garden for children, but do children need therapeutic/sensory greenspace? "The endless richness of nature wraps children in

colors, textures, tastes, fragrances, and movement. It encourages curiosity and motivates a passion for learning," as stated by Moore and Cosco in their article, *Therapeutic Gardens for Children*. They went into the exemplary features of nature: rain, sunshine, and storms, and how all tend to affect societal moods and stimulate oneself to think outside the body by connecting with the rhythms of nature around them. Therefore, any park stressing relationships between nature and other features like color, textures, sounds, found outside of one's self, add harmony to a child's world and help organize their attentions in constructive ways (Moore, 35).

The act of feeling rain, the wind, and seeing color change in nature, like a sunset are all elements found to be ordinary. The occasional intense sunset or huge gust of wind help to remind one of senses used all the time but not noticed. Reading about Moore's and Cosco's explanation of children's heightened sensitivity to such things helped to draw emphasis to the smallest details. For the smallest details are what make a sensory garden appeal to the senses. In conclusion if public sensory gardens for children with disabilities are very beneficial, then can they be developed into public parks? Many children are subject to hospitals with disease all over the United States. By providing therapeutic gardens in medical institutions the child patients could use the space for recovery or relaxation. Furthermore, by implementing large sensory gardens in an urban setting, similar to the more private therapeutic gardens, a wide range of disabilities living in the community may have full access to the park (Christensen, 3). wide range of disabilities

Literature Review (continued)

living in the community may have full access to the park (Christensen, 3). Few community members have admission to an indoor greenspace placed within a controlled institution because they are required to be either staff members or in relation to patients if not a patient. By providing a communal environment where space is not necessarily limited or privately owned, the general public has complete right-of-way and ownership to the space. Any therapeutic value the park might have would then not only help a minority of the community's population but all of the community today and in the future.

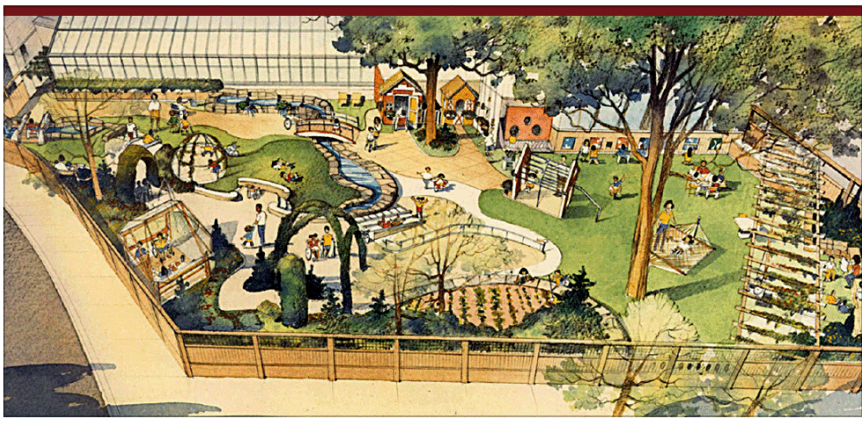


Fig. 12 | **LUCAS CENTER PERSPECTIVE**

The Lucas Garden Center (Fig. 12) belongs to a school separated into two sites, Canada Bay and Grosvenor Residential Center, Summer Hill in Sydney Australia. It has varied learning environments for maximizing educational opportunities for students with severe disabilities and, occasionally, complex medical conditions (Admin, 2006).

The healing qualities include:

* sensory garden
* sensory plantings
* activity stations
* quiet areas
* music therapy
* family time integration
* the garden is visible from interior ridden patients who gain therapeutic by views
*provides work experience for mildly physically disabled.

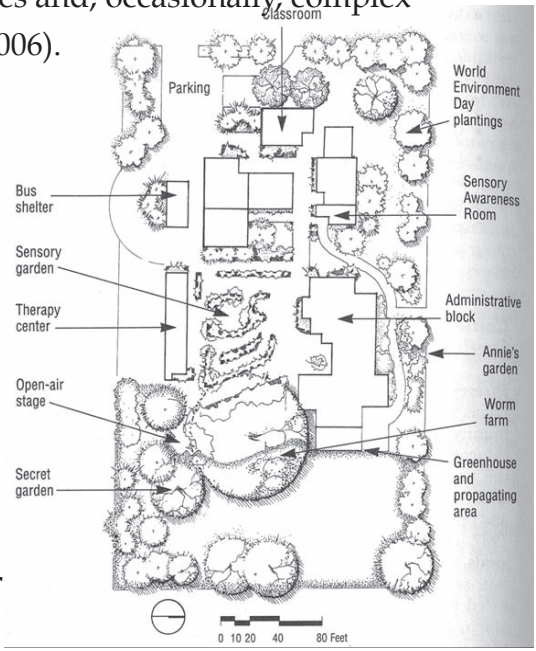


Fig. 11 | **LUCAS CENTER PLAN**

The Lucas Garden Center layout (Fig. 11) and healing qualities were main elements studied for the project. The descriptive plan labels special plantings and sensory areas that should have focus.

Case Study | Children's Institute

New Dawn Garden Design (NDGD) was the local firm to design the therapeutic garden at the Children's Institute in Pittsburg, Pennsylvania with founder, Christine Astorino. NDGD are experienced with healing gardens and have a reputation for combining creativity with practicality in their designs.

The therapeutic Garden at The Children's Institute features a sunflower pavilion with a patio and shaded seating (Fig. 13). Gently meandering walkways, plenty of private places for people to stop and sit, and an interactive fountain (right), all enrich the garden with their full accessibility. *"The garden will use the outdoors in a way we've not been able to before and will reflect our commitment to respond to all the needs of our patients and their families,"* said President and CEO David K. Miles.

Fig. 13 | **SUNFLOWER PAVILION**

There garden follows through with the sunflower theme which terrific in an institutionalized setting. However, designing a community park facilitating children with disabilities calls for a less formal theme. The design elements (Fig. 15, page 28) like an accessible treehouse, textured and differentiating pathways, a mixture of materials seen in plan view, on the other hand were studied and even borrowed.

Fig. 14 | **SUNFLOWER FOUNTAIN**

Lucas Garden Center (continued)

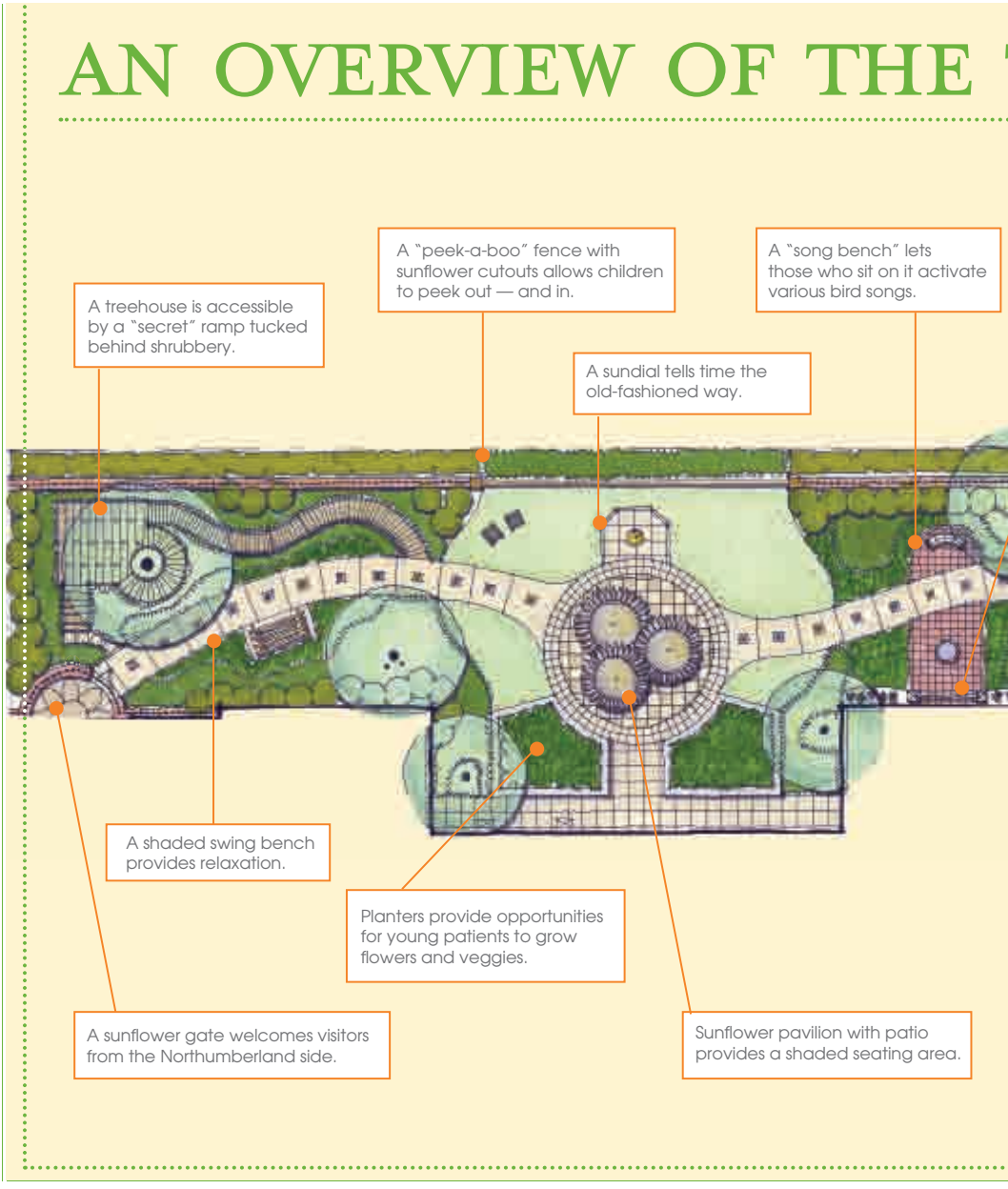
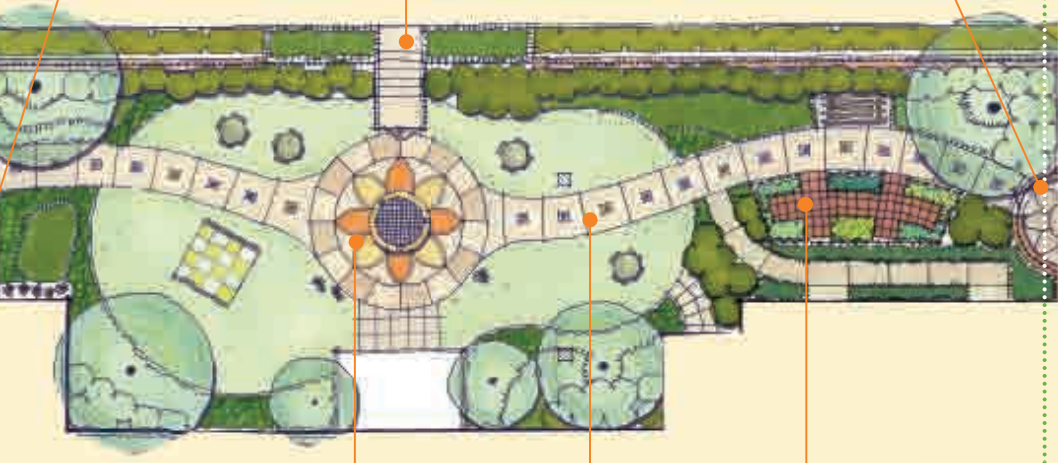


Fig. 15 | **LUCAS GARDEN CENTER OVERVIEW**

THERAPEUTIC GARDEN



Case Study | Leichtag Family Healing Garden

The Leichtag Family Healing Garden was designed by landscape architect Topher Delaney. She is a visionary artist and cancer survivor who has made it her passion to design spiritual sanctuaries for civic, business, and private spaces. Delaney's Leichtag Family Healing Garden is located in San Diego and bursts with color and laughter. It act as a great example for healing gardens its therapeutical but whimsical and playful content.

Fig 16. | **SAM THE DINOSAUR**

The garden is entered through the towering legs of a 20-foot by 40-foot long, steel-framed dinosaur named Sam (Fig. 16). It has added natural characteristics as purple trumpet vines climb up through its legs and eventually to the head where it gestures bending down to look inside the hospital.

At night the dinosaur is lit with soft white lights that helps it act as a huge night-light. This playful duality of importance for the day and night strengthen its positive effects on all involved. The act of naming the dinosaur so that it becomes personified and less of huge architectural threat also creates a positive effect with the children. "Sam" helps to bring the towering dinosaur down to the children as they share similar, or even exact, names for themselves.

The garden was built in 1997 when a child's paradise was built over a torn down parking lot. When the community sees such a huge change in spatial definition and knowing the lot space was recycled, ownership and acceptance replace negativity or hesitation that might be experienced with the popular greenfield development.

Fig. 17 | **SEA HORSE FOUNTAIN**

Past the "Samosaurus" lives a garden full of color and whimsy that inspires life. A windmill draws the eyes up to flying birds of the sky. A seven-foot-tall, blue and green tiled sea horse fountain spits streams of water into a miniature reflection pond (Fig. 17). Large starfish benches seat families of five. Shade is provided by giant colorful umbrellas hovering over six-foot benches that can be wheeled away or into different arrangements. A colbalt-blue stucco wall shines embedded disks of glass representing zodiac constellations. A shadow wall with cut out animal shapes create changing shadows according to the sun. Flowers are used to attract butterflies and hummingbirds and to provide natural fragrances like those of geraniums: lemon, mint, and chocolate. All latter and more characteristics of this garden provide wonderful examples of stimulating installations. They all work together to create a healing environment that focuses on nature. These characteristics provided this project with the creativity to invent a healing park where the inspiration of life is also present.

Case Study | Turenscape

The Turenscape in part with the Tianjin Waterfront Corridor Bridge located in the Dedong District, Tianjin, China is was used as a case study where the local natural environment was duplicated and experiential in an urban-type placement.

The picture below (Fig. 18) illustrates the rebirth of what use to be an unkempt and empty dumping ground spotted with deserted shanties and outdated irrigation ditches and water towers. The site was inaccessible, unsafe, and provided no corridor between the growing city behind it and the lush marshland in front. So the site was channeled with marble and ornamental plants with future channeling plans in mind. Because of the sites renovation the city dwellers have been given a comfortable transition to nature and nature has been provided a healthy edge from the city.

An example like the Turenscape strengthened the idea of safely bringing nature to the urban culture and gave a terrific sensory idea on how to associate walkway edges with natural vegetation.

Fig. 18 | **TURENSCAPE WALKWAY**

Case Study | London Airport

Other case studies used include the London Airport where a play mat (Fig. 19) consisting of a variety of foam contours was placed for children. Children were attracted to the mat and as a four-hour-delayed airplane passenger, watching the children was enjoyable. They would role all over the mat, bounce, jump and fall, and chase each other. It was obvious some of the children were completely strangers, but in the setting of this huge cushy play mat the unknown was set a side and immediate play buddies were made.

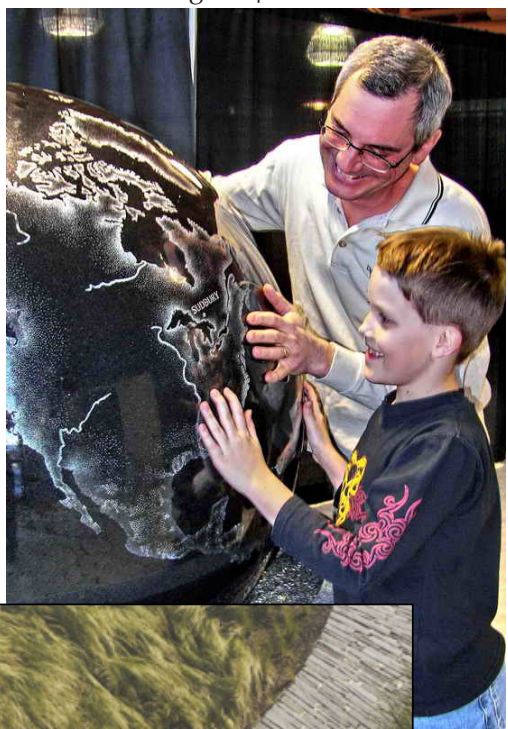
The mat's extremely bright color choices made it almost impossible for children and parents to miss. Surrounding and front facing chairs provide a form of enclosure for the temporary playground. Also, when children were not using the mat, adults were seen laying on it and reading on the curvilinear lawn chair-shaped forms. So the mat proved to have multiple users and the ability to draw strangers together. Both ideas of multiple uses and bringing to people together took placement in the spatial uses of the proposed urban sensory park.

Fig. 19 | **AIRPORT PLAY AREA**

Case Study | Minor Studies

Other minor case studies and photographs that were used for inspiration are here illustrated. In Figure 20, a large stone globe is experienced by parent and child. This idea was borrowed in the form of a central water feature.

Fig. 20 | **GLOBE EXAMPLE**



Below (Fig. 21-22) are two examples of walkways and how they interact with their surrounding vegetation. The pathway guards (seen lower left) and types of grasses were implemented in the proposed northern site nature area.

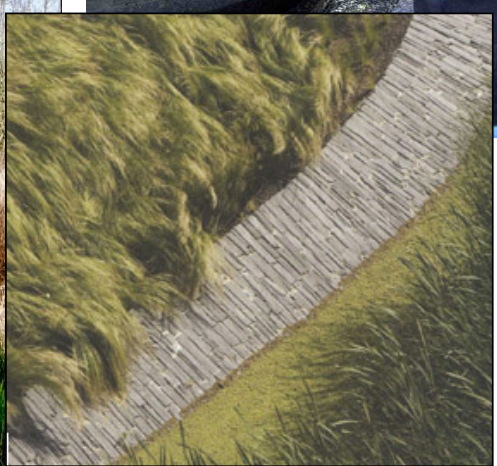


Fig. 21 | **GRASS PATH EXAMPLE**

Fig. 22 | **PATHWAY EDGE EXAMPLE**

Methodology

The methodology was used to research four subproblems. The first was discovering typical design needs in medium sized parks for children. Second, was a list of environmental characteristics and playground equipment that might be similar and/or different between children with disabilities and those without will be considered. Third, a park manageable for children with disabilities was located for maximum use. Finally fourth, two major questions asking, "What benefits if any, will be drawn from the improved public greenspace?" and "What those benefits are?" were explored. Both historical and descriptive research was used to gather primary and secondary information on the problem.

To determine typical design characteristics needed in small to medium sized children parks secondary research methods were employed. Case studies of successful children's parks therapeutic gardens were viewed and analyzed for key features and spatial relationships. These case studies were found in journal articles and books at the Ball State University Architecture Library and Bracken Library. Other books and articles reviewed, were Center for Autism by Dona Alvino and Therapeutic Gardens by David Kamp. Both had great examples for looking at playground features and characteristics to meet the needs of children with disabilities. The quantitative research method was also used for collecting accurate data on children park standards, play features considered essential, and safety measures.

When discovering what environmental characteristics and playground equipment might be similar and/or different among children with disabilities and those without primary and

Methodology (continued)

secondary data was used. Interviews and open-ended questions were distributed to potential users and benefactors like: local teachers and other school personnel, active professionals within the realm of special education, and community members. The questions asked:

- What do you play in this community (student, resident, pedestrian, other profession, etc.)?
- Would you use this site if it were a children's park with full disability access? Why or why not?
- Do you think this site, as a children's park, would be a good change? Why or why not?
- Can you provide any history of this site? If "yes" please elaborate.

Online search engines and professional databases helped in collecting books with playground equipment standards and for first-hand contact with major distributors. Also Disabilities Specialist and Indianapolis Attorney, Dr. Greg Fehribach and Mr. Larry Markle with Ball State University's Disabilities Department were very helpful in obtaining information specific to those with disabilities.

Primary data was used to research a site where a park completely manageable for children with disabilities should be located for maximum use. Maps and observational data of Indianapolis were collected using city planning materials and personal site visits. Geographical Information System (GIS) files were also gathered for definition in park zoning and site analysis, mainly by Director Brad Beaubien with the Indianapolis CAP Center.

Primary and Secondary data was used in discovering possible benefits gained from an improved therapeutic space. Well-being by Nature: Therapeutic Gardens for Children an article written by Robin Moore and Nilda G. Cosco is about a successful design in studying the beneficial effects an environment has on children. In addition, a book by the well-known author Clare Cooper Marcus, helped write Healing Gardens: Therapeutic Benefits and Design Recommendations explaining an overall view of therapeutic garden benefits and design tips for completion of one. Natures Pharmacy: A History of Plants and Healing by Christine Stockwell, and Gardens for the Soul: Designing Outdoor Spaces Using Ancient Symbols, Healing Plants, and Feng Shui by Pamela Wood and John Glover were both used in concluding a plants pallet for the proposed plant design of the landscape.

Interviews of educated professional related to the proposal were contacted. Martha Hunt, a current Ball State University faculty member teaches a course on therapeutic gardens; Robin D. Moore & Nilda G. Cosco are authors of the popular article about therapeutic gardens for children; Keith Christensen, another article author, wrote about discovering the abilities among disabilities for outdoor play environments. Professionals including Ball State University Special Education Professors, Dr. Nina Yssel and Dr. Lisa Pufpaff, local Indianapolis Special Education School Teacher, Mrs. Megan Gatwood. Others include Mr. Brad Beaubien as the CAP Indianapolis Director and Board Director of Kennedy-King Neighborhood and Mr. Michael Tolan the current Kennedy-King Neighborhood President, and any other related sources were also interviewed to collect experienced

Methodology (continued)

views on the benefits the outdoors has on the children with disabilities and ways to increase their experiences.

Fig. 23 | **CHILD USING FINE MOTOR SKILLS**

Background

Site Location

Site Analysis

Transportation Maps

Site Placement

Site Description

Site Photographs

Site Demographics

Existing Conditions

Target Audience

Site Location

The proposed park is located again in Indianapolis. It is in a downtown atmosphere not 3 miles from the center of Indiana's state capitol, as seen in Figure 25. Existing conditions of the actual site and area are shown in in Fig. 26 (DMD, 2001).

Fig. 24 | **INDIANA STATE MAP**

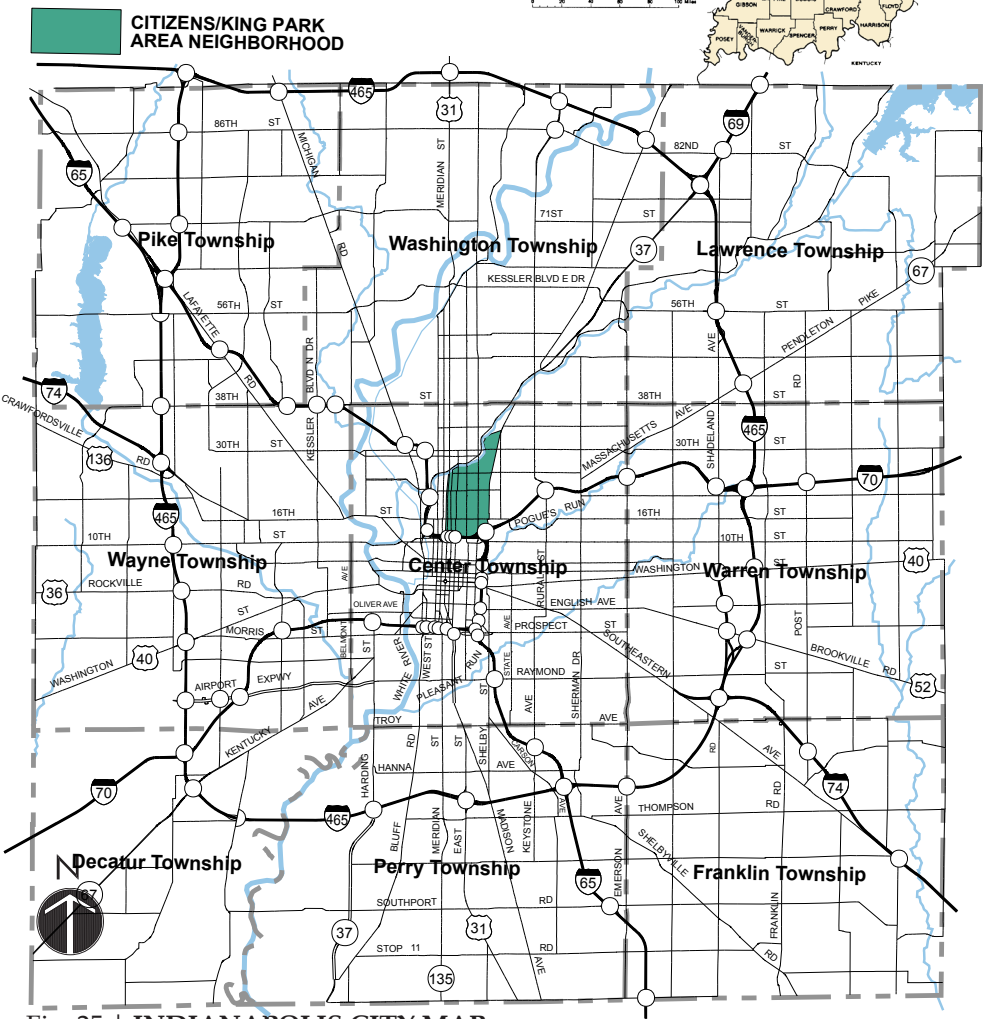


Fig. 25 | **INDIANAPOLIS CITY MAP**

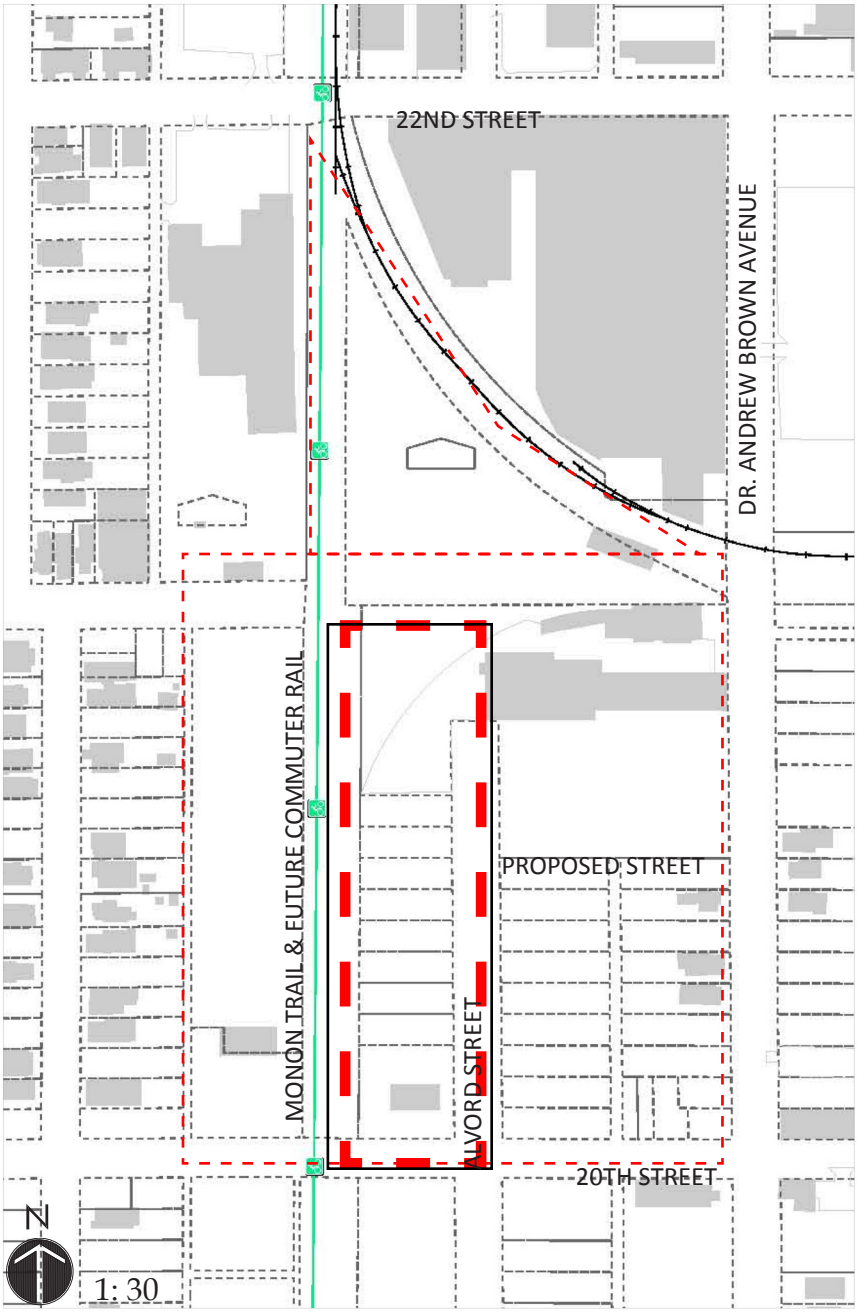


Fig. 26 | **SITE ANALYSIS MAP**

Transportation Maps

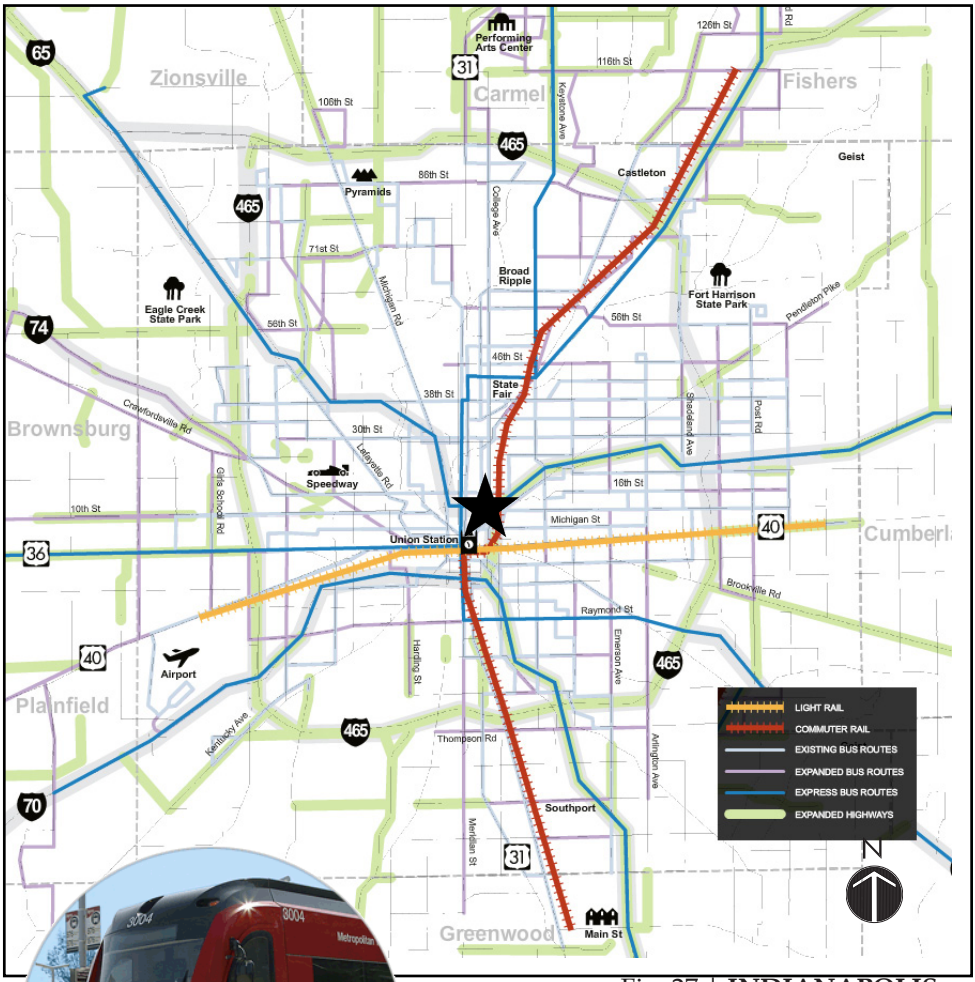


Fig. 27 | **INDIANAPOLIS TRANSPORTATION MAP**

Fig. 28 | **COMMUTER TRAIN PROFILE**

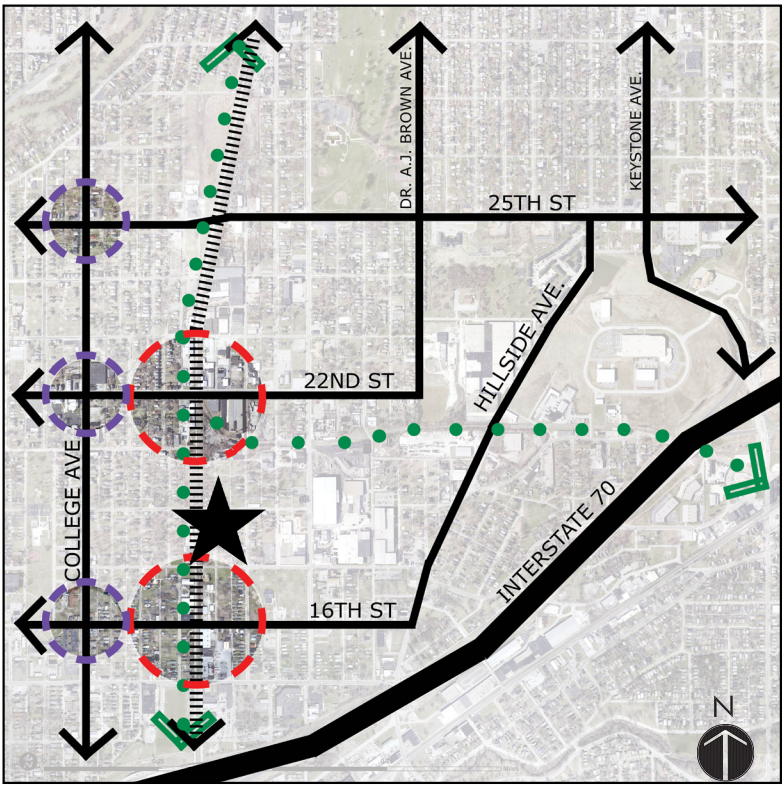


Fig. 29 | **KK NEIGHBORHOOD PROPOSED HUBS**

Rail Transit

Greenway

Major Roadways

Transit Hubs (minor)

Transit Hubs (major)

Through the middle of the site a commuter rail running just parallel with Monon Trail has been mentioned. Plans for its route and relevance to the site are shown in Figure 27, 29.

Possible stops for the train are visible (Fig. 29) and coincide with the community's wants as noted from a community meeting.

Site Placement

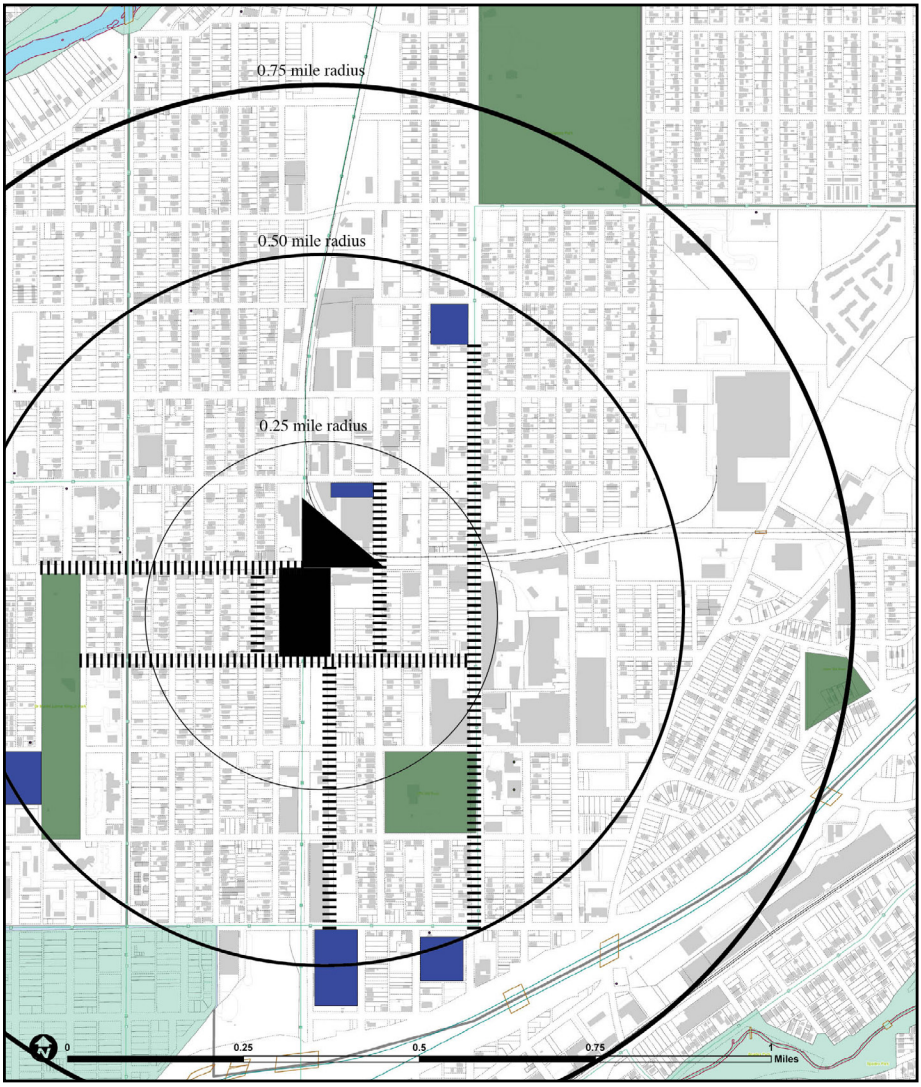


Fig.30 |SITE PLACEMENT MAP

Existing Buildings

Parks

School Lots

Proposed Project Site

Water Features/Historical District

Proposed Project Fingers

Site Description

The site is located in Citizens/King Park neighborhood and is one of the City's older residential neighborhoods with 69 percent of the houses having been built before 1940 (Fig. 30).

It is 2 miles northeast of Indianapolis with Cornell Avenue to the east, 21st Street to the north and 20th Street to the south (CofI, 1999). The sensory park is about .3 acres worth of unused greenspace. The Monon Trail and future Indianapolis commuter rail runs directly along the west side of the site.

Information on the community its self is as follows:

COMMUNITY
Very low income. Dominantly African Americans with more ethnicity growing in the south. City is thinking about adding more dense residential buildings west of site.

NEARBY SCHOOLS
HL Harshman Middle School (1:3 MS in Indianapolis): IPS 501
- Principle Robert Guffin
- 4 counted Special Education Assistants

21st Century Charter School
- Community service based curriculum
- Allows high school students to take college courses

Charity Dye School
Francis W Parker School: IPS 356
- (317) 226.4256
- Montessori approach

Day Adult High School
Indianapolis Project School
- http://theprojectschool.org
- (317) 608.0211
- curriculum is based on *"children working side-by-side with community members on real projects."*

Site Description (continued)

NEARBY PARKS

JTV Hill Park

- 1 ball diamond; 2 full basketball courts; playground equipment and swings - community building

Martin Luther King Memorial Park

- 2 full basketball courts; 1 ball diamond; memorial; public pool, Old Northside Historic District

Brookside Park

Oakhill Park Golf Course

- 9 hole course; 4 tennis courts; 2 ball diamonds; 1 full soccer field; playground; pool

Beckwith Park

Oscar Charleston Park

George Washington Park

American Legion Mall and Memorial Plaza

TRAILS

Monon Trail

Bike Trails on 22nd St.

OTHER SURROUNDING ENTITIES

- Schools Public: Division Info
- Bar-B-Que Inn
- Agnes Inn
- Dollar General
- Family Dollar Store
- Convergence of I-70 & I-65
- Gunslinger's Motorcycle Club
- Rough Riders Motorcycle Club (Google Search)

Site Photographs

Fig. 31 | **EXISTING 21st STREET END**

Fig. 32 | **EXISTING 21st STREET CONTINUED**

Fig. 33 | **EXISTING ALVORD STREET**

Fig. 34 | **EXISTING TRAIL & RAIL**

To the left are photographs illustrating the existing conditions of the project site. Fig. 31 shows the entrance to the proposed second site phase or Dog & Exercise Park. An abandoned building is visible within a deserted dead-end road.

Figures 31-34 show the actual proposed site for the Urban Sensory Park. The roads are very under used, no houses are visible, and in fact no form of life but over grown vegetation, is visible as well.

Fig. 34 shows a characteristic unique to the site and completely different from all other existing conditions. It shows a painted wall mural which sets the trail portion aside from any other.

Site Demographics

The following are findings assessed by CHHI, the Indianapolis Citizen's Healthy Homes Initiative in a Needs Assessment of the Citizens-King Neighborhood.

- Vacant lots outnumber homes.
- Vacant buildings provide promise and blight.
- 191 of 446 homes had at least one obvious code violations likely to cause health hazards.
- 54% of homes had more than one obvious code violations likely to cause homes to be abandoned.
- 2/3 of apartment buildings need help.
- Funding cuts undermine neighborhood support network (CHHI, 2003).

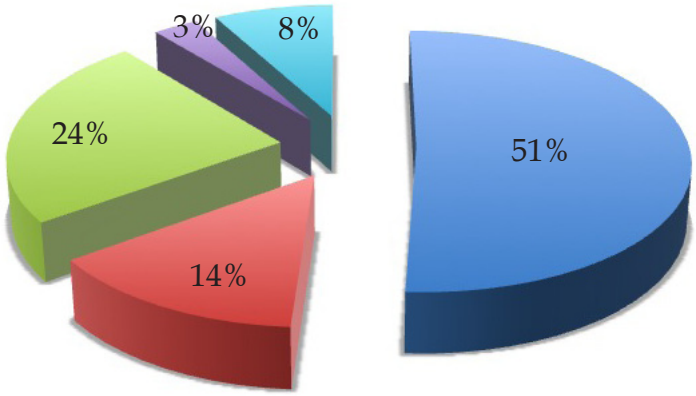


Fig. 35 | **STREET EVALUATION DIAGRAM**

Vacant Lots - no visible code violations

Very Low Risk - no visible code violations

Low Risk - code violation visible but no evidence that it is likely to cause immediate hazard

Serious Risk - code violation visible with evidence that it is likely to cause hazard.

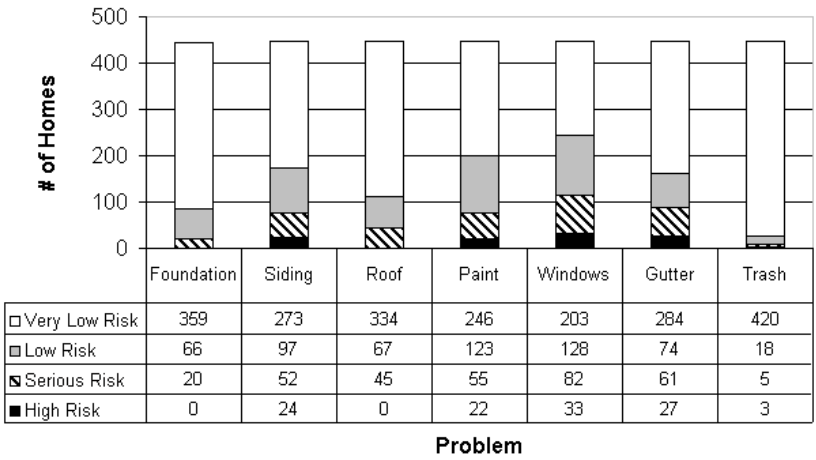
High Risk - code violations visible with evidence that it has already caused hazard (CHHI, 2003).

Citizens-King Neighborhood, once named after the Dr. Luther King Park, has large vacancy issues due to the lack of surrounding houses.

Figure 35 and accompanying description assesses the state of the existing homes that have proven to be unfit for dwelling. Fig. 36 supplies an aerial map where housing vacancy is shown.

Figure 37(below) expresses environmental hazards stemmed from the state of existing houses. The chart also explains how the state of each house is no longer a problem for the private entity but a problem for the public.

Fig. 36 | **AERIAL SITE MAP**



	Foundation	Siding	Roof	Paint	Windows	Gutter	Trash
Very Low Risk	359	273	334	246	203	284	420
Low Risk	66	97	67	123	128	74	18
Serious Risk	20	52	45	55	82	61	5
High Risk	0	24	0	22	33	27	3

Fig. 37 | **PROBLEMS CHART**

Site Demographics

Community input on parks and green spaces of the area were documented with the Citizens-King Neighborhood held October 16, 1999. The summit was one of many efforts focused on the Citizens area (CHHI, 2003).

The goal of the parks and green space discussion was to preserve and improve park and recreational facilities within the neighborhood. The neighborhood's discussion of the topic raised the following issues:

- In general, the parks in the neighborhood are under utilized.
- Programs that draw more kids to Martin Luther King Park should be created *(Possible programs are introduced with proposed park activities).*
- Adults should get involved to supervise programs at the Martin Luther King Park (*something wanted in all areas).*
- The Monon Trail needs to be completed to the downtown.
- The Monon Corridor is more important to the neighborhood than the Meridian Corridor (located on 22 Street).
- An inventory of the land resources available in the Monon Corridor would be helpful in seeking partners to develop this vacant land *(Land resources are introduced in the proposed park phases).*
- How can the City help in brownfield remediation. *(A solution for this is accomplished through the proposed park).*
- The neighborhoods need to play a big part in promoting brownfield remediation (CHHI, 2003).

Fig. 38 | **EXISTING HOUSING PHOTOGRAPH**

Existing Conditions

After looking at the site description and demographics it was important to understand what was going on with the land of the site. Fig. 39 shows that the site is a brownfield site and therefore coincides with Goals & Objects as well as community wants.

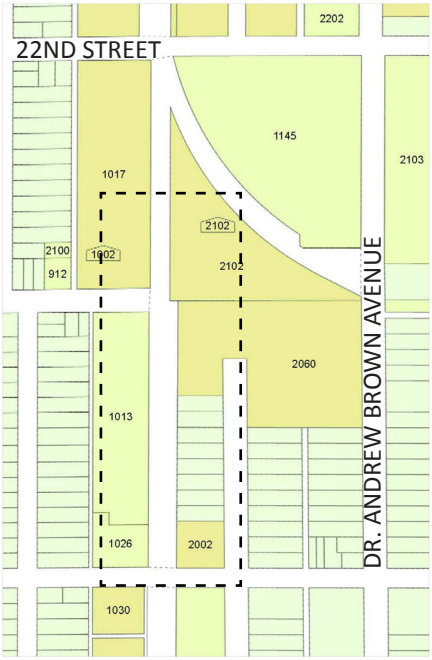


Fig. 39 | **BROWNFIELD MAP**

- The darker the yellow the worse the brownfield areas.
- 90% of the site consists of brownfields.
- Remaining lots are vacant.

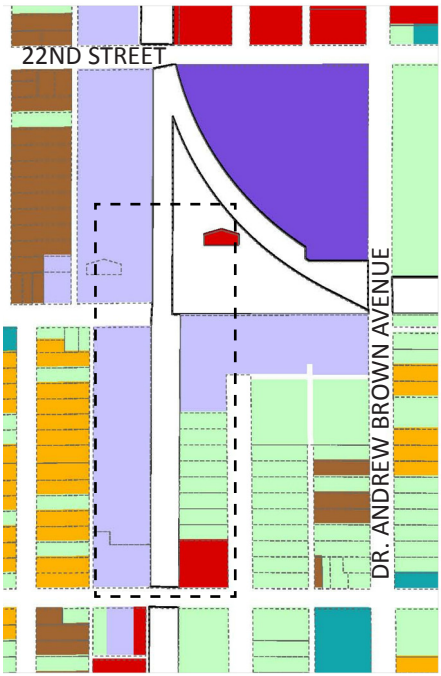


Fig. 40 | **ZONING MAP**

- Heavy Industrial
- Light Industrial
- 5-8 Residential Units per Acre
- 8-15 Residential Units per Acre
- Commercial - Retail
- Vacant
- Churches

1: 30 N

Fig. 40 expresses the site as a light industrial and vacant site which as also checks with the Goals in reclaiming an under-used site. Fig. 41 shows direct entity placement and Fig. 42 illustrates the very settle slope and water flow. Because their is little slope the proposal for a flat and accessible park is strengthened as well as water treatment methods that collect the water running to the southeast.

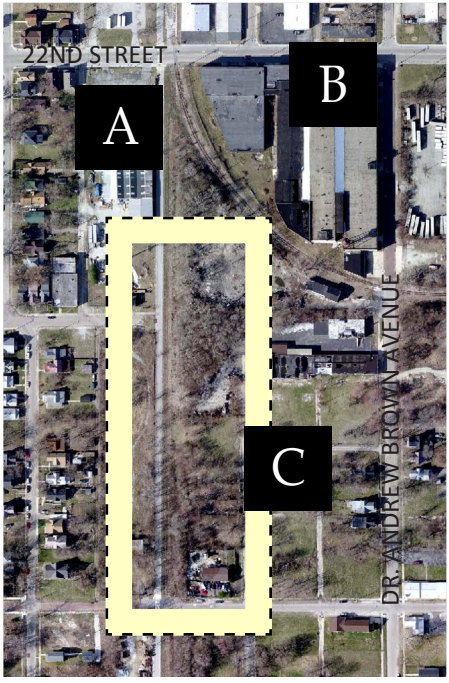


Fig. 41 | **AERIAL MAP**

A - Habitat for Humanity

B - Project School

C - Vacancy surrounding the proposed park site.

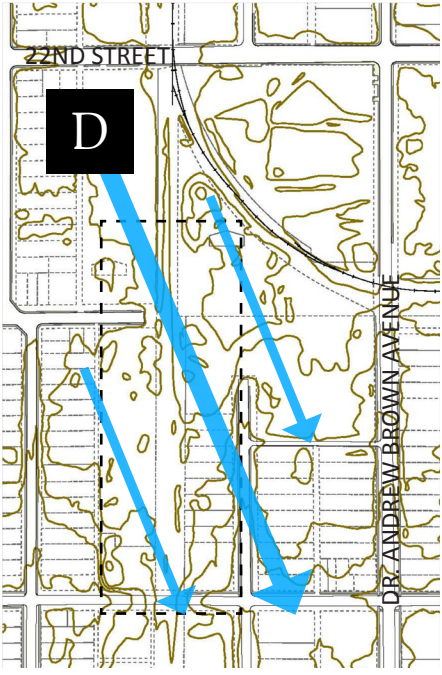


Fig. 42 | **TOPOGRAPHY MAP**

- Only 6 contours are located on site where the children's park will be located.
- Slope is NW to SE

D - Water is flowing to the streets.

Target Audience

CITIZENS/KENNEDY NEIGHBORHOOD

CHILDREN (ages 5-14)

PEOPLE WITH DISABILITIES

- Wheel Chair Users
- Cane & Walker Users
- Blind
- Deaf
- Autistic

GUARDIANS & ADULTS

TRAIL USERS

COMMUTER RAIL USERS

Fig. 43 | **CITIZENS/KING COMMUNITY MTG.**

Proposed Kennedy Park

Master King Park Plan

Phase Mitigation

Phase I: Exercise/Dog Park

- Character Drawings
- Planting Plan & Schedule

Phase II: Children's Sensory Park

- Concept Drawings (4)
- Children's Park Plan
- Character Sculpture Renderings
- Planting Plans & Schedules
- The 7 Senses

Phase III: Park Extensions

- Character Drawings
- Planting Plan & Schedule

Phase IV: Rest Station Area

- Character Drawings
- Planting Plan & Schedule

Master King Park Plan

Fig. 44 | MASTER **SITE PLAN**

Phase Mitigation

The proposed Kennedy Park is segmented into four different phases (Fig. 44) I) Exercise & Dog park, II) Children's Sensory Park, III) Park Extensions, IV) Rest Station Area. The first phase being built first and the fourth phase being built last. The second phase, as a Children's Sensory Park, is the main focus for the entire design, but it setting phase one as the Exercise/Dog Park was unavoidable. This park design is not only currently being designed as a park with the City of Indianapolis, but it's opening and fees for the usage of pets could become a fund raiser for the main children's park to come.

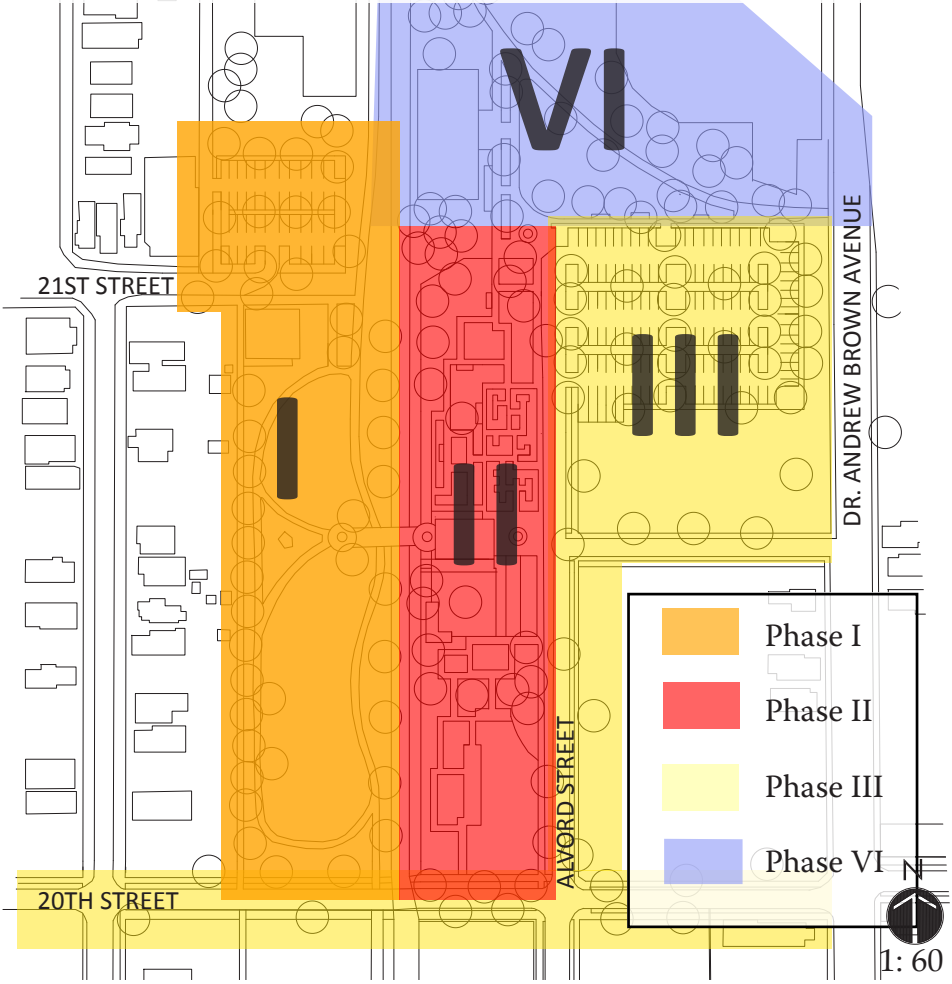


Fig. 45 | **PHASE MITIGATION PLAN**

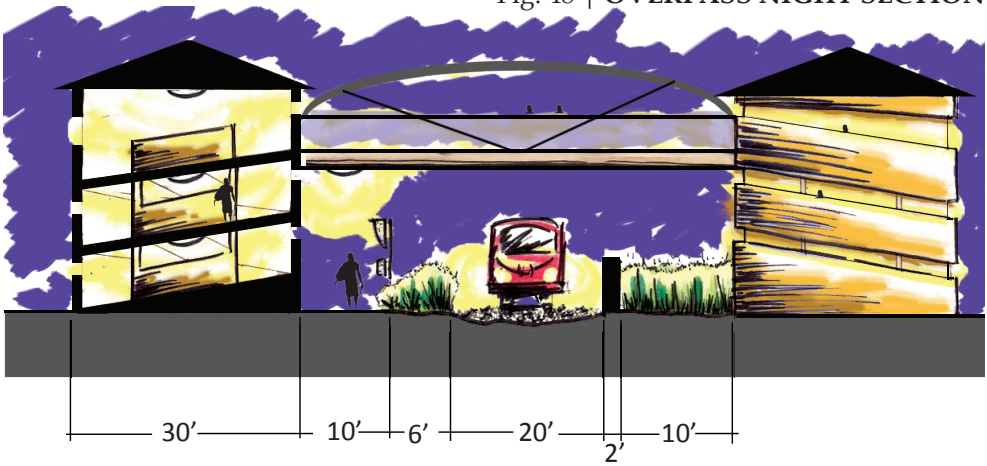
Phase | Exercise & Dog Park

Fig. 46 | **PHASE I SITE PLAN**

Fig. 47 | **MONON TRAIL & RAIL PERSPECTIVE**

Phase I is the Exercise/Dog Park (Fig. 45). Indianapolis Park's Department has set this property aside to be a park for the next five years and currently has 25 trees to plant for the site. These details were very important so that the plan of this park not only fits with the proposed sensory park, but to match the needs of the community. The relationship between the parks shows (Fig. 46) playing dogs, a wall mural and vegetation that all add character to the Monon Trail and Rail.

Fig. 48 | **OVERPASS NIGHT SECTION**



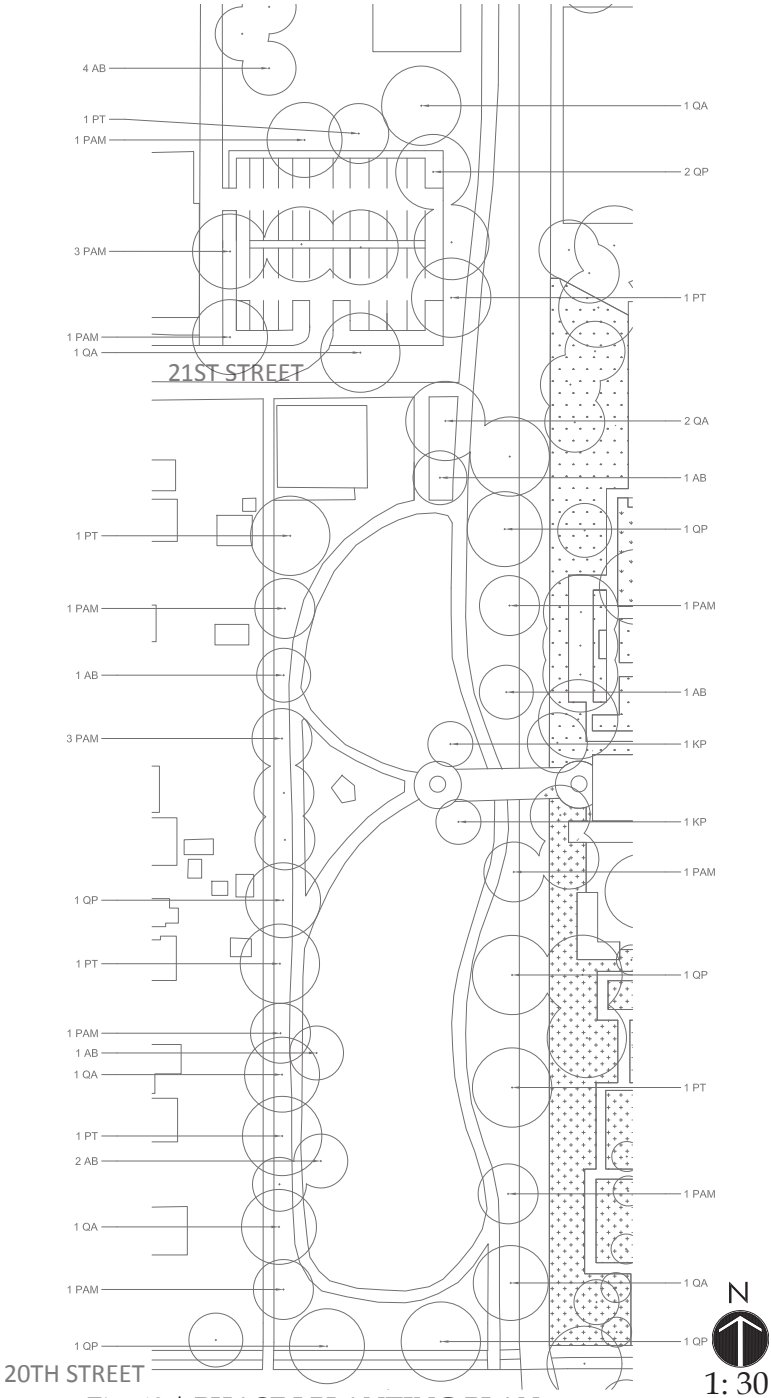


Fig. 49 | **PHASE I PLANTING PLAN**

SYMBOL	QUANTITY	COMMON NAME	BOTANICAL NAME	SIZE	ZONE	SUN/SHADE	FEATURE	FACTS	SEASON
Ground Covers									
G		Sweet Woodruff	Galiumodoratum		5_8		crushed leaf, stem	new-mown hay fragrance	last Sp - F
GP		Wintergreen	Gaultheria procumbens		3_8		crushed leaf	wintergreen fragrance	warm weather
Spices & Herbs									
CP	55	Parsley	Carum petroselinum			p.shade-shade		used for crowning in ancient Greece. Culinary & medicinal purposes.	April - mid. Aug
LA	41	Common Lavender	Lavendula angustifolia		5_9	full sun	leaves	culinary purposes, bouquets, fragrance	
MS	36	Spearmint	Mentha spicata			sun-p.sun		Medicinal and culinary purposes.	late June - Aug.
MSU	79	Apple Mint	Mentha suaveolens		5_9	full sun	flower	Used in tea. Can be invasive. Attracts bees, butterflies, and birds.	m. summer -e. fall
OVH	52	Greek Oregano	Origanum vulgare hirtum			full sun		culinary purposes	
TV	45	Winter Thyme	Thymus Vulgaris			p.shade-f.sun	leaves	Medicinal and culinary purposes.	May - Aug.
Vegetables (A selection of fruits and vegetables)									
AC	80	Onion	Allium cepa		3_9	sun		Medicinal & culinary purposes.	summer
BOA	23	Collards	Brassica oleracea var. acephala		3_9	sull sun			summer
CA	110	Green Pepper	Capscicum annuum		3_9	sun			summer
CAL	71	Yellow Pepper	Capscicum annum L.		3_9	full sun		Fast growing	summer
CM	5	Connecticut Field Pumpkin	Curcubita Maxima		3_9	full sun		culinary purposes.	spring- summer
CS	90	Cucumber	Cucumis sativus		3_9	full sun		set fruit without pollination	
DC	19	Carrot	Caucus carota		3_9	sun			summer
LE	36	Red Tomato	Lycopersicon exculentum		3_9	sun		determinant not indeterminant	summer
LEL	12	Cherry Red Tomato	Lycopersicon esculentum L.		3_9	full sun			
PS	13	Sweet Pea							
ST	20	Common Potato	Solanum tuberosum		3_9	sun		fast growing	summer
Perennials									
AP	3	Bear's Breeches	Acanthus spinosus		5_9	f.sun-p.shade		exciting flower shape.	June - Aug.
DH	100	Daylily	Hemerocallis		1_11				summer
SB	21	Lamb's Ear	Stachys byzantina		4_10	f.sun-p.shade	leaf	nice soft color and extremely soft foliage.	
TM	100	Alaska Series Nasturtiums	Tropaeolum majus			f.sun-p.shade		variety of colors. Peppery taste. Can spread. Medicinal & culinary purposes	
WM	9638sq'	Wildflower Mix:	Wildflower Mix:						
Shrubs									
BD	6	Butterfly Bush	Buddleia davidii		5_9		flower	sweet	July - frost
RI		Nova Rasberry Bush	Rubus idaeus		2_11	full sun		thornless	June - Aug.
Grasses									
EAG		Blue Lymegrass	Elymus arenarius glauca						spr. - lt. summer
FM'NU'	13337sq'	Bamboo	Fargesia murieliae 'New Umbrella'		4_9	f.sun-p.shade		coarse textured, steelblue color.	June - Aug.
LO	9902 sq'	Rabbit's Tail Grass	Lagurus ovatus			sun		nice golden fall color	
PA		Perennial Fountain Grass	Pennisetum alopecuroides					fuzzy rabbit tail-like ends. Good in mass displays	
SP'BV'	515sq'	Needle Grass	Stipa capillata 'Bridal Veil'			full sun		transitional grass, colorful bloom. Good in mass displays	July - winter
Trees									
AB	5	Trident Maple	Acer buergerianum					adaptable to urban conditions. Good for tight locations and urban use. Displays nice red/orange fall color.	
KP	2	Golden Rain Tree	Koelreuteria paniculata		5_9			dried fruit cases make sounds with the wind.	sp. - fall
MS	2	Saucer Magnolia	Magnolia x soulangiana		4_9	sun-p.shade	flowers	attracts bees, butterflies, and/or birds. Provides winter interest	
PAM	1	Cork Tree	Phellodendron amurense		3_8			recommended for buffer strips around parking lots. Good shade tree. Good in urban areas with air pollution, poor drainage, compacted soil, or common drought. Medium growth.	
PC	2	Cleveland Pear	Pyrus calleryana 'Cleveland Select'		5_8	full sun		more blooms than any other flowering pear tree. Rapid growth rate. Upright and canal branching. Purplish-red fall color. Branch structure withstands ice and wind damage. Fruitless and few pest problems. Tolerates urban conditions and heavy soils.	sp. - fall
PT	7	Loblolly Pine	Pinus taeda		6_9	full sun	evergreen	fast growing. Long pin needles. Often used for wind/noise barriers.	
QA	5	Gobbler Sawtooth Oak	Quercus acutissima		5_8	full sun		attracts wild turkeys. Very adabptable. Smaller acorn. Fast growing	
QS	9	Shumard Oak	Quercus shumardi		5_9	full sun	copper-red	growes moderately fast. Handsome shade tree. Tolerates poor soil and drought conditions.	

Fig. 50 | **KENNEDY PARK PLANTING SCHEDULE**

Phase I's plant pallet is very natural with natural grasses (Fig. 51 example) and many shade and ornamental trees (Fig. 50 example) that have very few problems in an urban environment.

Fig. 51 | **CLEVELAND PEAR TREE**

Fig. 52 | **NEEDLE GRASS**

Concept 1 | Sculptural/Educational

The first concept (Fig. 52) experimented with a northern natural site dedicated to wildflowers, and educational horticultural garden and nature walk. The south part of the site was then made-up of educational play sculptures, an inviting lawn, a structure using an existing foundation and an enclosed lay ground. This structure acts as a cafe and/or restroom for the site.

Fig. 53 | **CONCEPT 1 PLAN**

Concept 2 | Nature/Horticultural

The second concept (Fig. 53) used the northern part of the site for a recreational hill with pockets of wildflowers. The hill would provide for activities year round. The center becomes the nature area with a butterfly garden and a formalized horticultural garden that leads to a shelter using an existing foundation. The playground remains at the south end of the site.

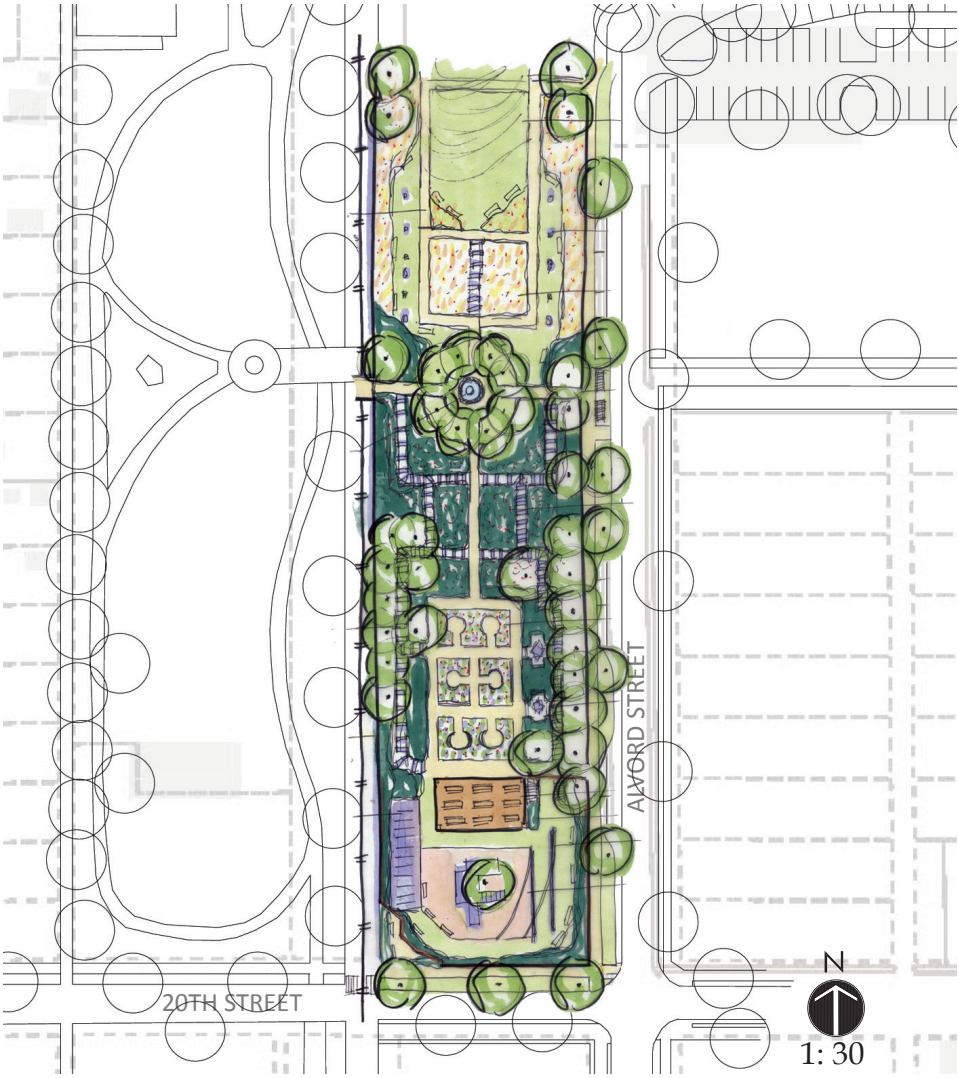


Fig. 54 | **CONCEPT 2 PLAN**

Concept 3 | Playgrounds

The third concept (Fig. 54) refers back to the first where a large wildflower garden and nature area are present in the northern part of the site. In this concept, however, a series of playgrounds were designed to fit linearly in the middle of the site. The London Airport Case Study (Fig. 19) relates to this design. The horticultural garden claims the southeast corner along with open lawn.

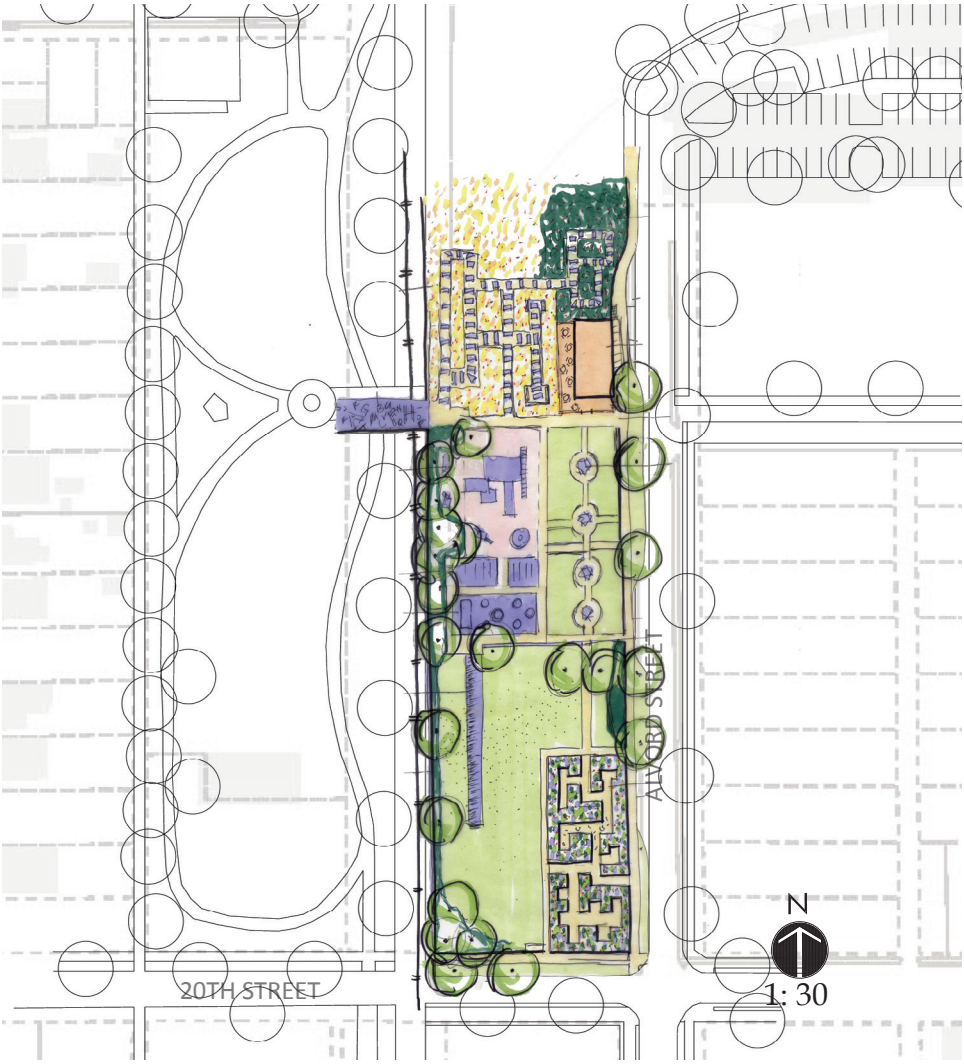


Fig. 55 | **CONCEPT 3 PLAN**

Concept 4 | Combination

The fourth and final concept (Fig. 55) was drawn from combining the three previous concepts. It again, keeps the northern wildlife and horticultural area and the open lawn at the south end. The difference lies with a central cafe and restrooms that become the focal point. The playground follows the structure to the middle and connects to a south-bound nature walk strip.

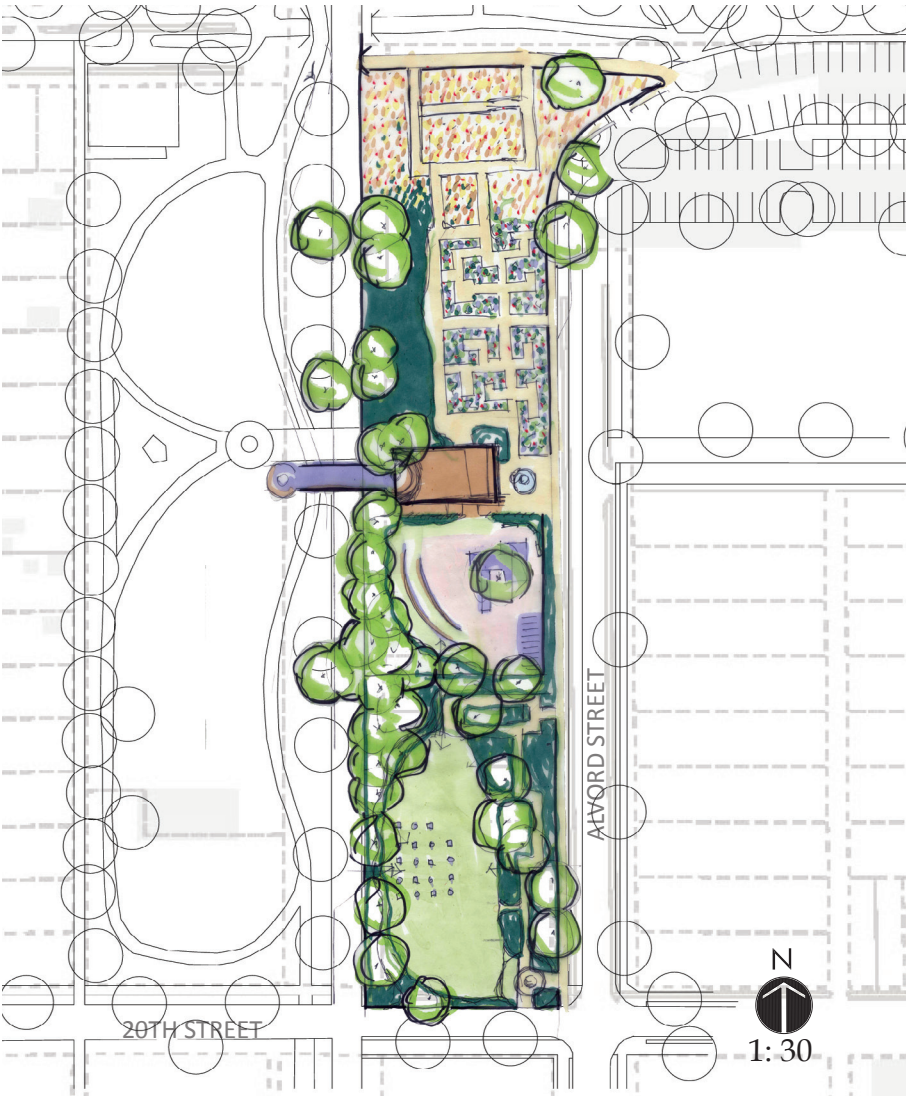


Fig. 56 | **CONCEPT 4 PLAN**

Fig. 57 | **PHASE II SITE PLAN**

Fig. 58 | **SITE RENDERING**

By reviewing the concepts and finding the best features implemented, this master plan of the Children's Sensory Park was created (Fig. 57). The plan, though similar to the Combination Concept (Fig. 56), shows differences mainly in the southern half of the site.

The playground is again enclosed next to the central structure, but outdoor terraced seating for an outdoor classroom was added. Also the lawn opens up the southeastern corner where most visitors are predicted to enter (seen in Fig. 58). The wildflower & butterfly meadow was moved to the south for more sunlight and in order to make way for an audible bamboo forest to be placed in the northwestern corner of the park.

Phase | Character Drawings

Starting at the northern part of the site a visitor might choose to enter the Children's Sensory Park through a bamboo forest or small field of grass that leads to the horticultural garden (Fig.60).

Through the different environments different smells, like bamboo versus herbs and peppers (see Fig. 74) are experienced. Changes in smells and sounds created by the vegetation becomes important, for instance, when a blind person is trying to get their bearings. Different ground textures also appear on site, where decking (Fig.59) is used in the bamboo area and concrete and brick elsewhere.

Fig. 60 | **NORTH SITE SECTION** **1:10**

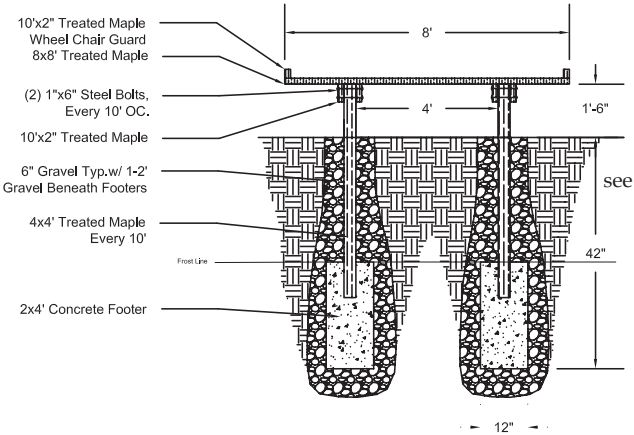
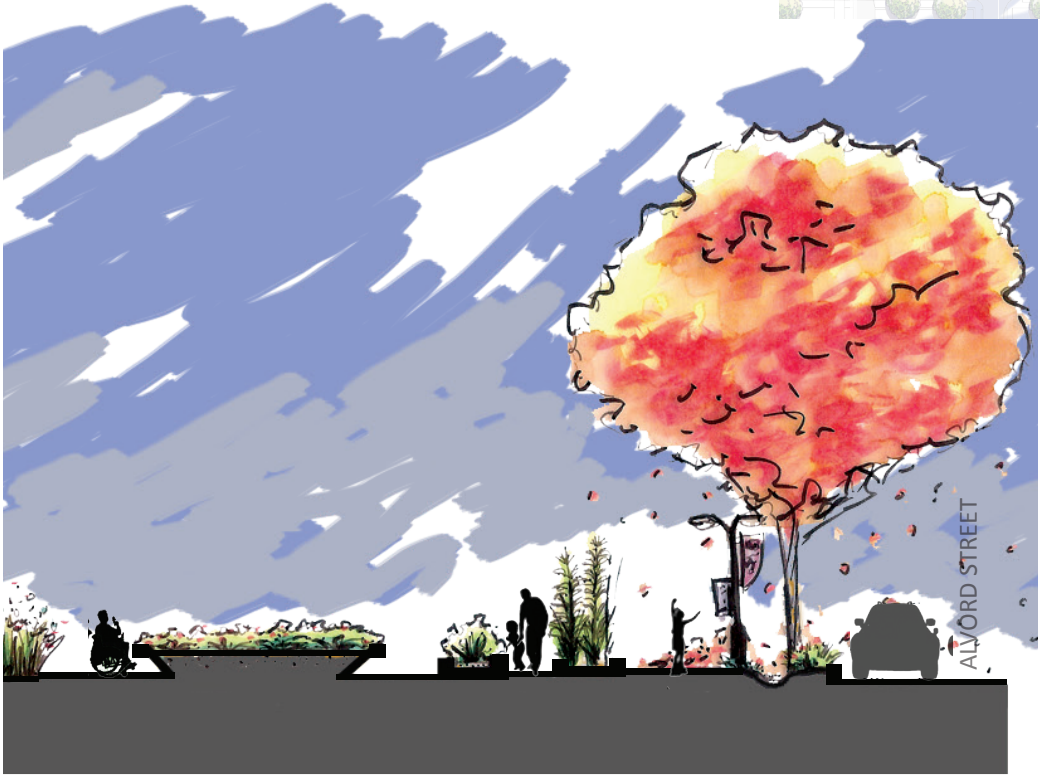


Fig. 59 | **DECKING GROUND MATERIAL**

see Fig. 60



- A Clicking Bamboo Forest
- B Buffering & Fragrant Pine Trees
- C Central Cafe, Restrooms, & Overpass Entrance
- D Safely Enclosed Playground
- E Rubber Ground Texture
- F Wildlife attracting Oak Trees
- G Wildflower & Butterfly Meadow
- H Central Globe Fountain
- I Main Entrance
- J Outdoor Classroom & Chalk Wall
- K Horticulture Gardens

Fig. 61 | **MAIN ENTRANCE SECTION** **1:10**

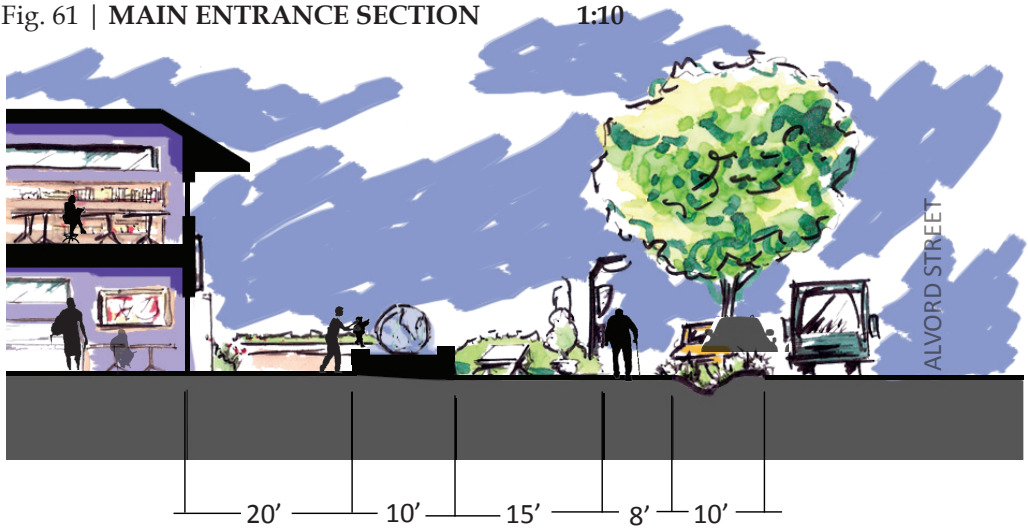
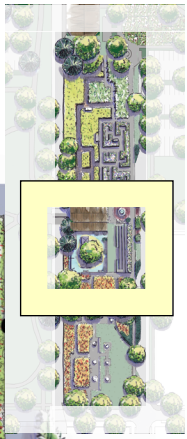


Fig. 61 and 62 help show the transition from the bamboo forest and horticultural gardens to the main entrance and remaining Children's Sensory Park.



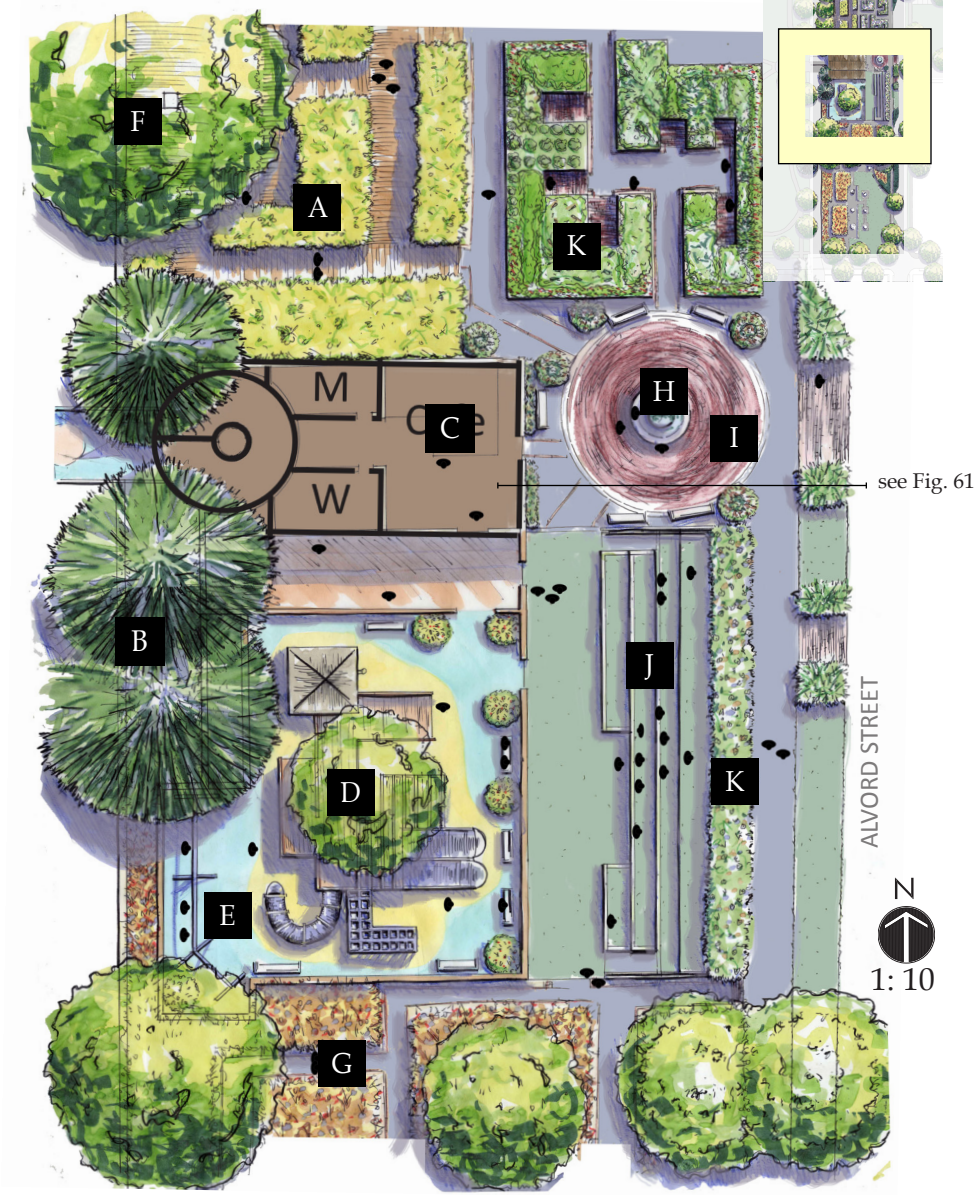
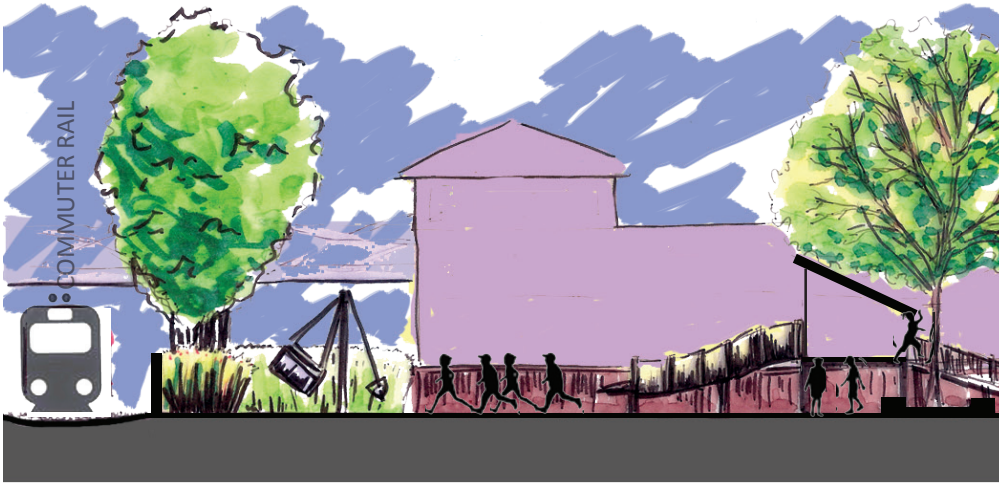


Fig. 62 | **ENHANCED SITE PLAN**

Fig. 63 | **MAIN ENTRANCE PERSPECTIVE**

The main entrance to the park (Fig. 64) shows much activity and freedom for vehiclists, bicyclists, roller bladers, walkers, etc. Among many other elements, a chalk wall is shown backing the outdoor classroom area, that could stem art therapies and help with community ownership of the site.

Fig. 64 | **PLAYGROUND SECTION** **1:10**



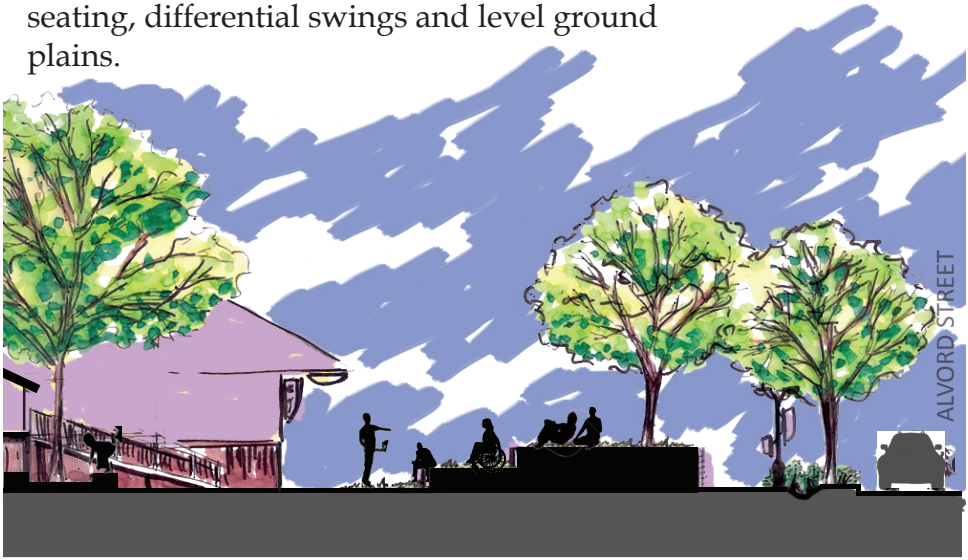
In discovering the transitional space and main entrance to Phase II's Child Sensory Park many things can be experienced.

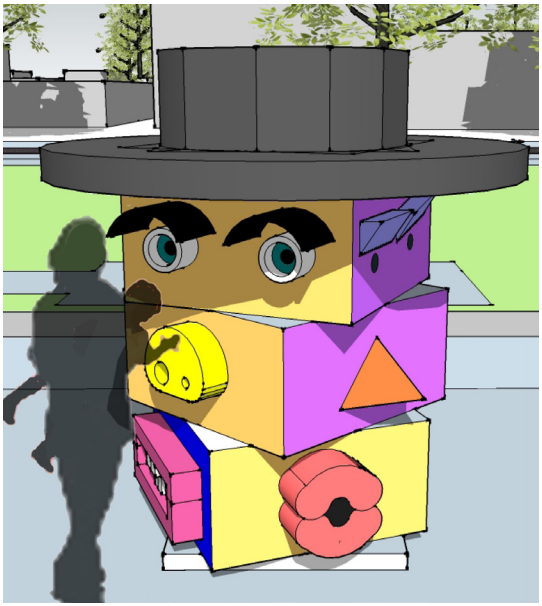
First of all is the central Kennedy Cafe where food collected from the horticultural garden might be collected and resold. This structure acts as the entire site's way-finding structure so children or adults can easily see it and be confident on where they are in relationship or know where the main exit and entrance is (Fig 63-64).

see Fig. 64

The relationship between child, built infrastructure and nature becomes important in allowing for no separation (Fig. 64). For instance, placing a Cork Tree in the middle of the playground not only provides shade, but a new squishy texture that children and guardians can self-discover. The playground its self is handicap accessible with boarding ramps for play and the terraced seating, differential swings and level ground plains.

see Fig. 66

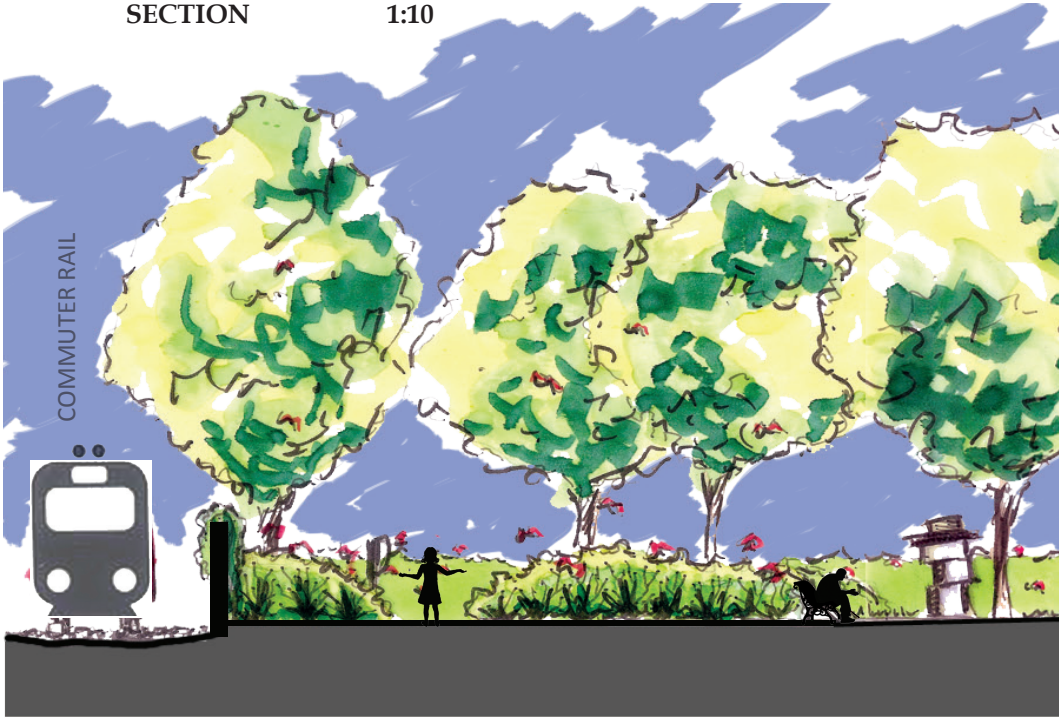




The faces sculpture or 4 Face (Fig. 65), is one of two of very similar sculptures. One has the height most comfortable for a child to reach and the other an adult. Providing two allow the child and adult to play off of each other. By repetition the child learns what colors match, what nose goes with what mouth , etc.

Fig. 65 | **THE FACES (4 FACE)**

Fig. 66 | **BUTTERFLY MEADOW & STRUCTURE LAWN SECTION 1:10**



Moving on to the south part of the site and by crossing the bamboo forest, main entry, and playground, the butterfly & wildflower meadow and structure lawn may be reached.

The structure lawn locate to the southeastern most corner is placed to draw visitors in and then to immediately entice them into playing with sculptures (Fig. 66). The sculptures are not entirely for aesthetics but for learning instruments as well. Each helps with educational values that identify shapes, introduce problem solving techniques, promote group cooperation, discover, and more.

The butterfly & wildflower meadow works with the educational value of the sculptures and entire site by attracting butterflies, birds, bees, squirrels, and other insects. In doing this visitors become acquainted with these forms of wildlife and learn how to share the environment so rich with color and life.

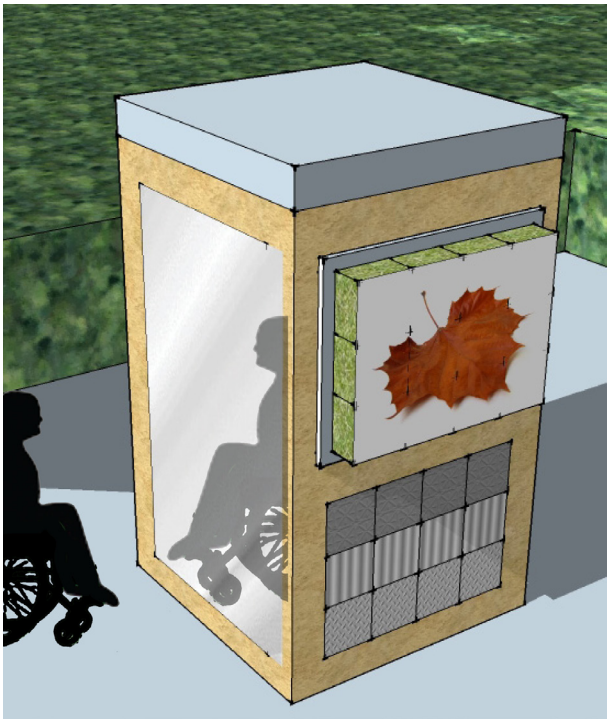


Fig. 67 | **TEXTURE BLOCK**

The texture block (Fig. 67), comprised of many different samples ranging from metals to wood, is meant to stimulate the sense of touch. A mirror is also present to help learning processes achieved better by visual repetition.

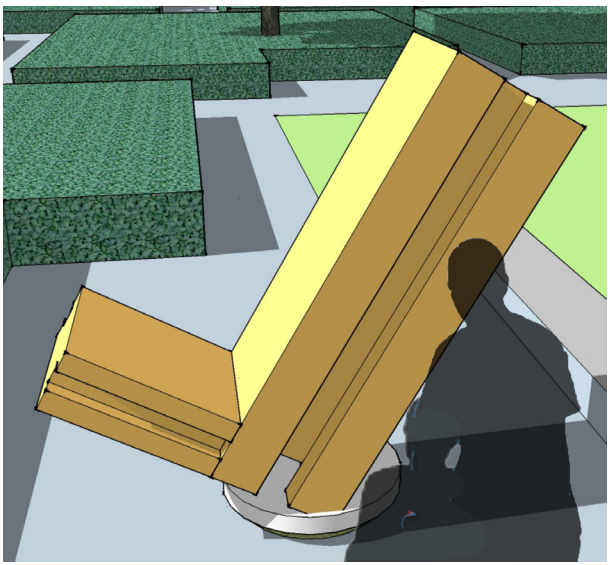
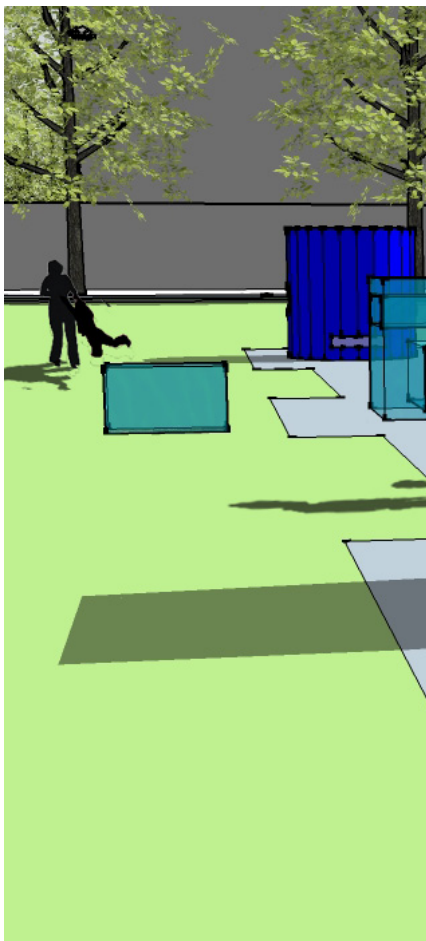


Fig. 68 | **WIND SCULPTURE**



Other sculptures include large shape pillars, a wind sculpture, and texture block. The shape pillars (Fig. 69) are padded plastic cut-outs of 3rd-dimensional shapes. Park visitors will be able to remove shapes from other shapes and are recommended to crawl through, climb on, and stack all related pieces. Experiencing these pillars are meant to help mostly with gross motor skills.

The wind sculpture (Fig. 67) promotes natural wind discovery and working with others. Children can climb on this piece and turn each other in which ever way the wind is flowing or going against.

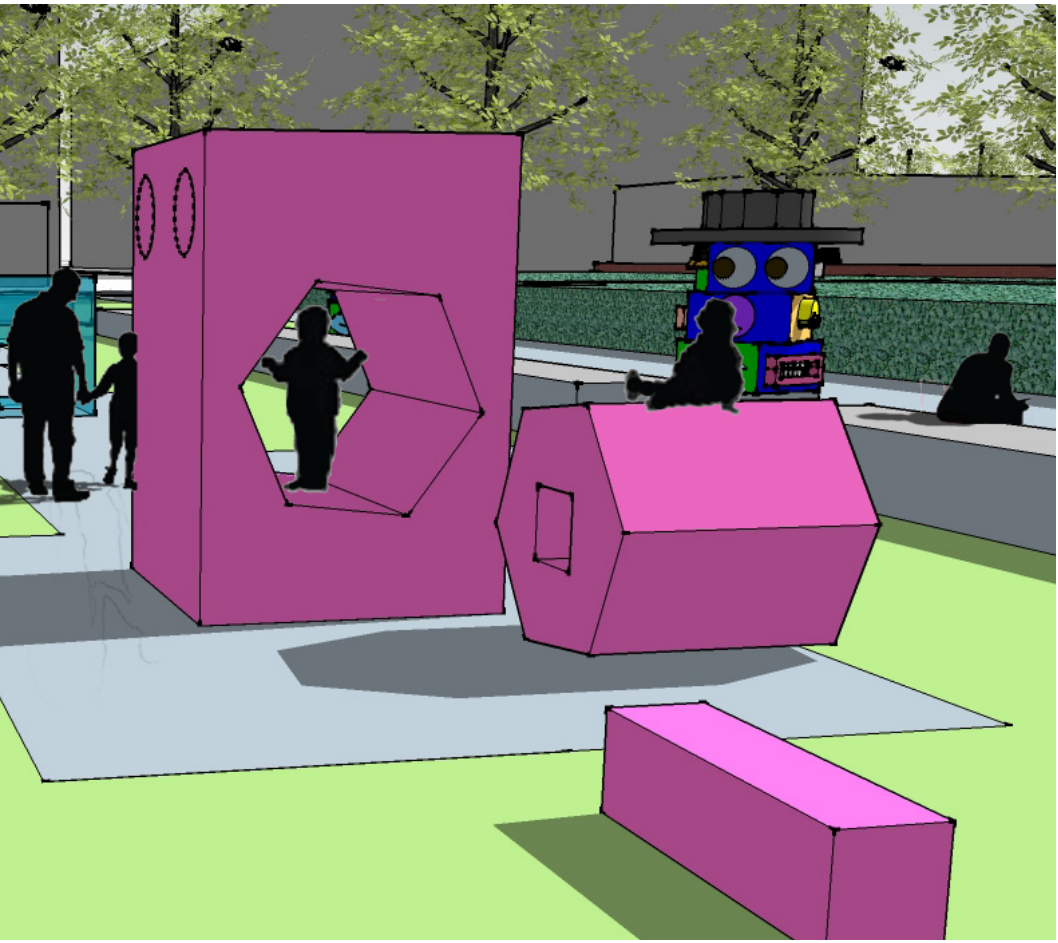


Fig. 69 | **SHAPE PILLARS**

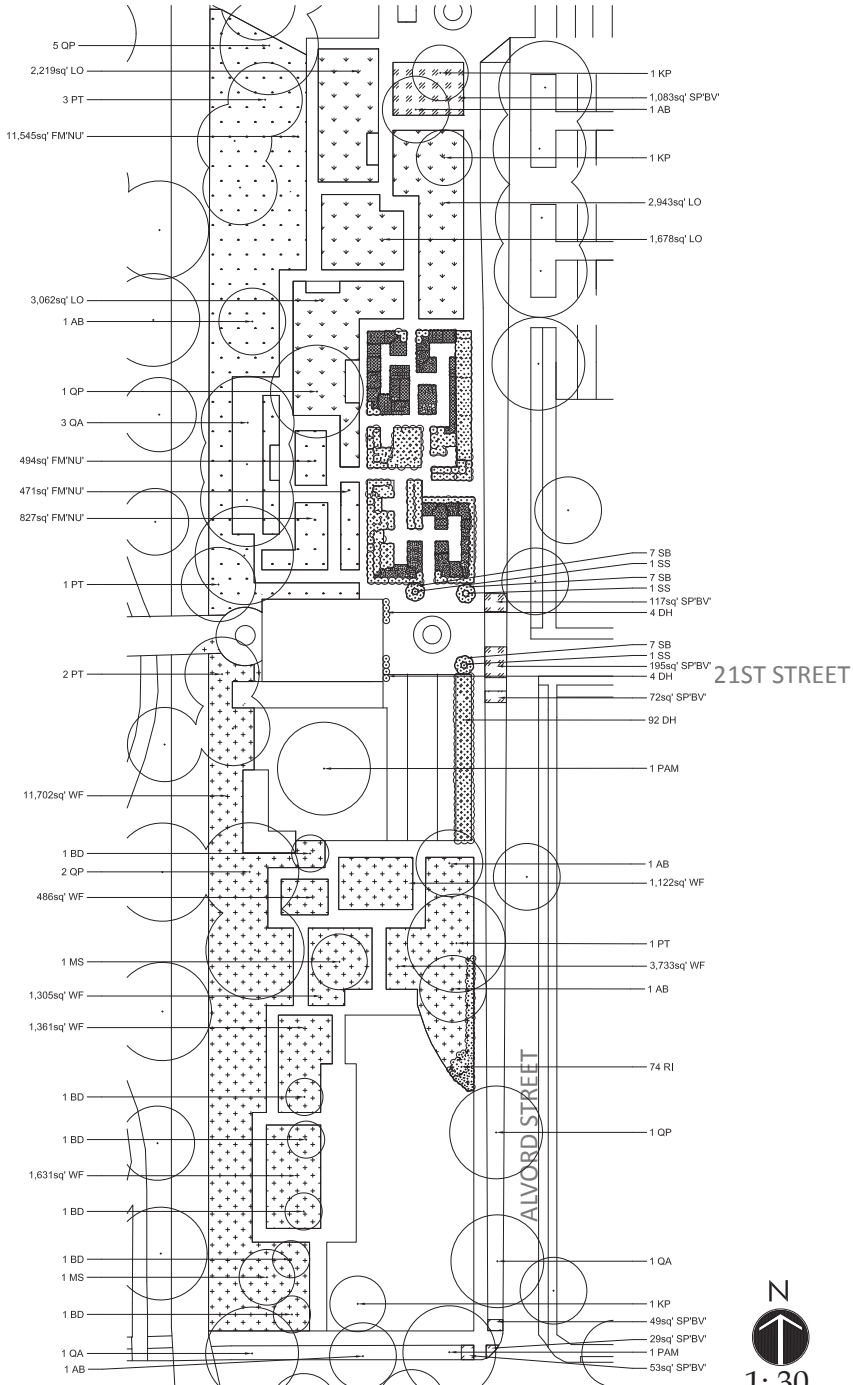


Fig. 70 | **PHASE II PLANTING PLAN**

SYMBOL	QUANTITY	COMMON NAME	BOTANICAL NAME	SIZE	ZONE	SUN/SHADE	FEATURE	FACTS	SEASON
Ground Covers									
G		Sweet Woodruff	Galiumodoratum		5_8		crushed leaf, stem	new-mown hay fragrance	last Sp - F
GP		Wintergreen	Gaultheria procumbens		3_8		crushed leaf	wintergreen fragrance	warm weather
Spices & Herbs									
CP	55	Parsley	Carum petroselinum			p.shade-shade		used for crowning in ancient Greece. Culinary & medicinal purposes.	April - mid. Aug
LA	41	Common Lavender	Lavendula angustifolia		5_9	full sun	leaves	culinary purposes, bouguets, fragrance	
MS	36	Spearmint	Mentha spicata			sun-p.sun		Medicinal and culinary purposes.	late June - Aug.
MSU	79	Apple Mint	Mentha suaveolens		5_9	full sun	flower	Used in tea. Can be invasive. Attracts bees, butterflies, and birds.	m. summer -e. fall
OVH	52	Greek Oregano	Origanum vulgare hirtum			full sun		culinary purposes	
TV	45	Winter Thyme	Thymus Vulgaris			p.shade-f.sun	leaves	Medicinal and culinary purposes.	May - Aug.
Vegetables (A selection of fruits and vegetables)									
AC	80	Onion	Allium cepa		3_9	sun		Medicinal & culinary purposes.	summer
BOA	23	Collards	Brassica oleracea var. acephala		3_9	sull sun			summer
CA	110	Green Pepper	Capsicum annuum		3_9	sun			summer
CAL	71	Yellow Pepper	Capsicum annum L.		3_9	full sun		Fast growing	summer
CM	5	Connecticut Field Pumpkin	Curcubita Maxima		3_9	full sun		culinary purposes.	spring- summer
CS	90	Cucumber	Cucumis sativus		3_9	full sun		set fruit without pollination	
DC	19	Carrot	Caucus carota		3_9	sun			summer
LE	36	Red Tomato	Lycopersicon exculentum		3_9	sun		determinant not indeterminant	summer
LEL	12	Cherry Red Tomato	Lycopersicon esculentum L.		3_9	full sun			
PS	13	Sweet Pea							
ST	20	Common Potato	Solanum tuberosum		3_9	sun		fast growing	summer
Perennials									
AP	3	Bear's Breeches	Acanthus spinosus		5_9	f.sun-p.shade		exciting flower shape.	June - Aug.
DH	100	Daylily	Hemerocallis		1_11				summer
SB	21	Lamb's Ear	Stachys byzantina		4_10	f.sun-p.shade	leaf	nice soft color and extremely soft foliage.	
TM	100	Alaska Series Nasturtiums	Tropaeolum majus			f.sun-p.shade		variety of colors. Peppery taste. Can spread. Medicinal & culinary purposes	
WM	9638sq'	Wildflower Mix:	Wildflower Mix:						
Shrubs									
BD	6	Butterfly Bush	Buddleia davidii		5_9		flower	sweet	July - frost
RI		Nova Rasberry Bush	Rubus idaeus		2_11	full sun		thornless	June - Aug.
Grasses									
EAG		Blue Lymegrass	Elymus arenarius glauca						spr. - lt. summer
FM'NU'	13337sq'	Bamboo	Fargesia murieliae 'New Umbrella'		4_9	f.sun-p.shade		coarse textured, steelblue color.	June - Aug.
LO	9902 sq'	Rabbit's Tail Grass	Lagurus ovatus			sun		nice golden fall color	
PA		Perennial Fountain Grass	Pennisetum alopecuroides					fuzzy rabbit tail-like ends. Good in mass displays	
SP'BV'	515sq'	Needle Grass	Stipa capillata 'Bridal Veil'			full sun		transitional grass, colorful bloom. Good in mass displays	July - winter
Trees									
AB	5	Trident Maple	Acer buergerianum					adaptable to urban conditions. Good for tight locations and urban use. Displays nice red/orange fall color.	
KP	2	Golden Rain Tree	Koelreuteria paniculata		5_9			dried fruit cases make sounds with the wind.	sp. - fall
MS	2	Saucer Magnolia	Magnolia x soulangiana		4_9	sun-p.shade	flowers	attracts bees, butterflies, and/or birds. Provides winter interest	
PAM	1	Cork Tree	Phellodendron amurense		3_8			recommended for buffer strips around parking lots. Good shade tree. Good in urban areas with air pollution, poor drainage, compacted soil, or common drought. Medium growth.	
PC	2	Cleveland Pear	Pyrus calleryana 'Cleveland Select'		5_8	full sun		more blooms than any other flowering pear tree. Rapid growth rate. Upright and canal branching. Purplish-red fall color. Branch structure withstands ice and wind damage. Fruitless and few pest problems. Tolerates urban conditions and heavy soils.	sp. - fall
PT	7	Loblolly Pine	Pinus taeda		6_9	full sun	evergreen	fast growing. Long pin needles. Often used for wind/noise barriers.	
QA	5	Gobbler Sawtooth Oak	Quercus acutissima		5_8	full sun		attracts wild turkeys. Very adabptable. Smaller acorn. Fast growing	
QS	9	Shumard Oak	Quercus shumardi		5_9	full sun	copper-red	growes moderately fast. Handsome shade tree. Tolerates poor soil and drought conditions.	

Fig. 50 | **KENNEDY PARK PLANTING SCHEDULE**

Phase II's planting plan (Fig. 70) includes a variety of plants dedicated to each sense of the body. Mass plantings were a strong theme for identification and sensory purposes. The entire schedule (Fig. 50) is also completely edible and a very important development needed in dealing with children with disabilities.

Fig. 71 | **LAMB'S EAR**

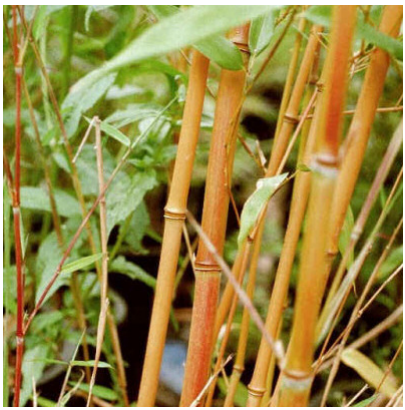


Fig. 72 | **BAMBOO**

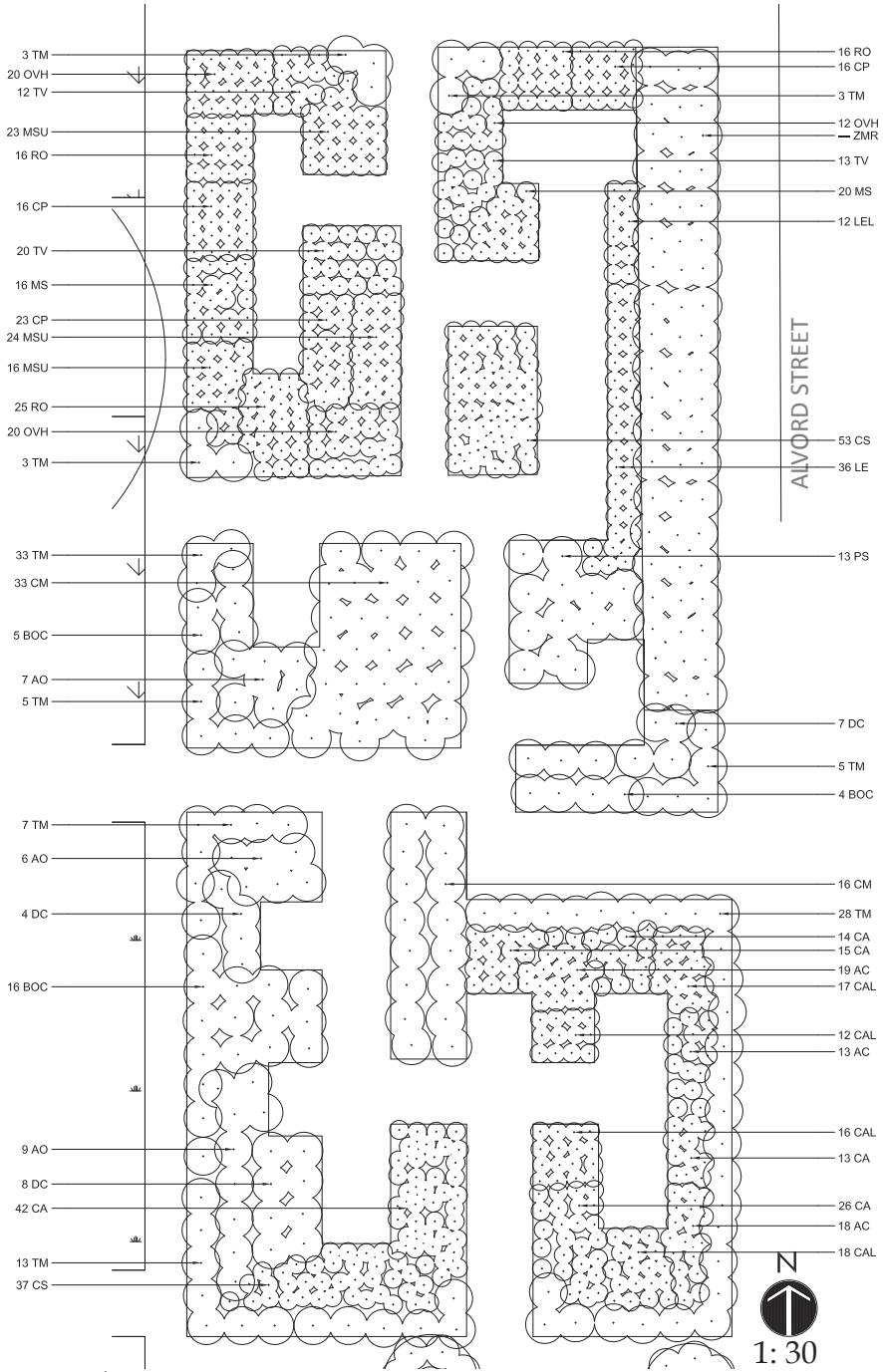


Fig. 73 | **HORTICULTURE GARDEN PLANTING PLAN**

SYMBOL	QUANTITY	COMMON NAME	BOTANICAL NAME	SIZE	ZONE	SUN/SHADE	FEATURE	FACTS	SEASON
Ground Covers									
G		Sweet Woodruff	Galiumodoratum		5_8		crushed leaf, stem	new-mown hay fragrance	last Sp - F
GP		Wintergreen	Gaultheria procumbens		3_8		crushed leaf	wintergreen fragrance	warm weather
Spices & Herbs									
CP	55	Parsley	Carum petroselinum			p.shade-shade		used for crowning in ancient Greece. Culinary & medicinal purposes.	April - mid. Aug
LA	41	Common Lavender	Lavendula angustifolia		5_9	full sun	leaves	culinary purposes, bouquets, fragrance	
MS	36	Spearmint	Mentha spicata			sun-p.sun		Medicinal and culinary purposes.	late June - Aug.
MSU	79	Apple Mint	Mentha suaveolens		5_9	full sun	flower	Used in tea. Can be invasive. Attracts bees, butterflies, and birds.	m. summer -e. fall
OVH	52	Greek Oregano	Origanum vulgare hirtum			full sun		culinary purposes	
TV	45	Winter Thyme	Thymus Vulgaris			p.shade-f.sun	leaves	Medicinal and culinary purposes.	May - Aug.
Vegetables (A selection of fruits and vegetables)									
AC	80	Onion	Allium cepa		3_9	sun		Medicinal & culinary purposes.	summer
BOA	23	Collards	Brassica oleracea var. acephala		3_9	sull sun			summer
CA	110	Green Pepper	Capscicum annuum		3_9	sun			summer
CAL	71	Yellow Pepper	Capscicum annum L.		3_9	full sun		Fast growing	summer
CM	5	Connecticut Field Pumpkin	Curcubita Maxima		3_9	full sun		culinary purposes.	spring- summer
CS	90	Cucumber	Cucumis sativus		3_9	full sun		set fruit without pollination	
DC	19	Carrot	Caucus carota		3_9	sun			summer
LE	36	Red Tomato	Lycopersicon exculentum		3_9	sun		determinant not indeterminant	summer
LEL	12	Cherry Red Tomato	Lycopersicon esculentum L.		3_9	full sun			
PS	13	Sweet Pea							
ST	20	Common Potato	Solanum tuberosum		3_9	sun		fast growing	summer
Perennials									
AP	3	Bear's Breeches	Acanthus spinosus		5_9	f.sun-p.shade		exciting flower shape.	June - Aug.
DH	100	Daylily	Hemerocallis		1_11				summer
SB	21	Lamb's Ear	Stachys byzantina		4_10	f.sun-p.shade	leaf	nice soft color and extremely soft foliage.	
TM	100	Alaska Series Nasturtiums	Tropaeolum majus			f.sun-p.shade		variety of colors. Peppery taste. Can spread. Medicinal & culinary purposes	
WM	9638sq'	Wildflower Mix:	Wildflower Mix:						
Shrubs									
BD	6	Butterfly Bush	Buddleia davidii		5_9		flower	sweet	July - frost
RI		Nova Rasberry Bush	Rubus idaeus		2_11	full sun		thornless	June - Aug.
Grasses									
EAG		Blue Lymegrass	Elymus arenarius glauca						spr. - lt. summer
FM'NU'	13337sq'	Bamboo	Fargesia murieliae 'New Umbrella'		4_9	f.sun-p.shade		coarse textured, steelblue color.	June - Aug.
LO	9902 sq'	Rabbit's Tail Grass	Lagurus ovatus			sun		nice golden fall color	
PA		Perennial Fountain Grass	Pennisetum alopecuroides					fuzzy rabbit tail-like ends. Good in mass displays	
SP'BV'	515sq'	Needle Grass	Stipa capillata 'Bridal Veil'			full sun		transitional grass, colorful bloom. Good in mass displays	July - winter
Trees									
AB	5	Trident Maple	Acer buergerianum					adaptable to urban conditions. Good for tight locations and urban use. Displays nice red/orange fall color.	
KP	2	Golden Rain Tree	Koelreuteria paniculata		5_9			dried fruit cases make sounds with the wind.	sp. - fall
MS	2	Saucer Magnolia	Magnolia x soulangiana		4_9	sun-p.shade	flowers	attracts bees, butterflies, and/or birds. Provides winter interest	
PAM	1	Cork Tree	Phellodendron amurense		3_8			recommended for buffer strips around parking lots. Good shade tree. Good in urban areas with air pollution, poor drainage, compacted soil, or common drought. Medium growth.	
PC	2	Cleveland Pear	Pyrus calleryana 'Cleveland Select'		5_8	full sun		more blooms than any other flowering pear tree. Rapid growth rate. Upright and canal branching. Purplish-red fall color. Branch structure withstands ice and wind damage. Fruitless and few pest problems. Tolerates urban conditions and heavy soils.	sp. - fall
PT	7	Loblolly Pine	Pinus taeda		6_9	full sun	evergreen	fast growing. Long pin needles. Often used for wind/noise barriers.	
QA	5	Gobbler Sawtooth Oak	Quercus acutissima		5_8	full sun		attracts wild turkeys. Very adabptable. Smaller acorn. Fast growing	
QS	9	Shumard Oak	Quercus shumardi		5_9	full sun	copper-red	growes moderately fast. Handsome shade tree. Tolerates poor soil and drought conditions.	

Fig. 50 | **KENNEDY PARK PLANTING SCHEDULE**

A separate plants pallet was made for the horticultural garden. Many vegetables, fruits, and other plants supplying different textures (Fig. 75), color, fragrances (Fig. 74), uses like pumpkin, were all included for each sense .

Fig. 74 | **LAVENDER**

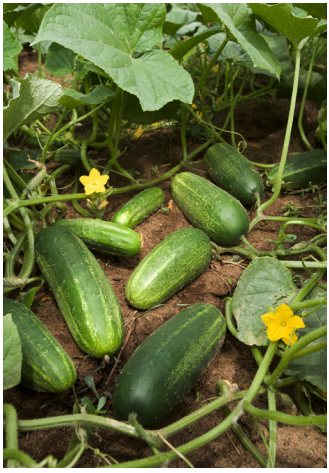
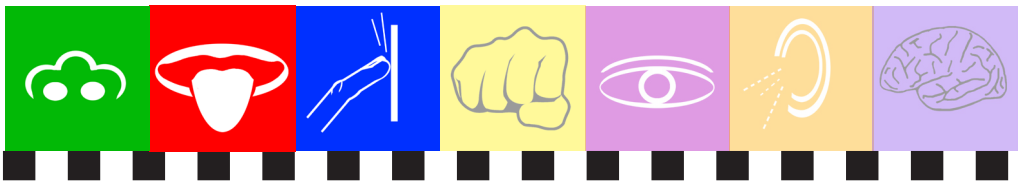
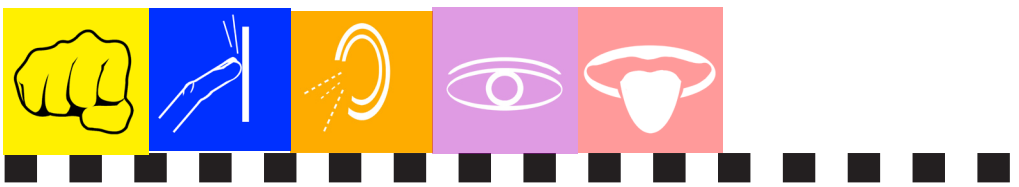


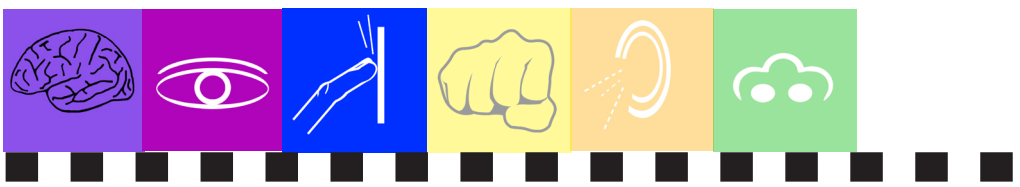
Fig. 75 | **CUCUMBER PLANT**

Phase | Placement of the 7 Senses

As a sensory garden it was important that all features applicable for each sense be located throughout the entire site. This diagram (Fig. 76) shows the major placement of each sense and where the highlights of each or located. This became important to understand because though all seven senses: smell, taste, touch, see, hear, and the added do and thinking are present in all areas of the park knowing where there major placements are gives a better understanding of each area.







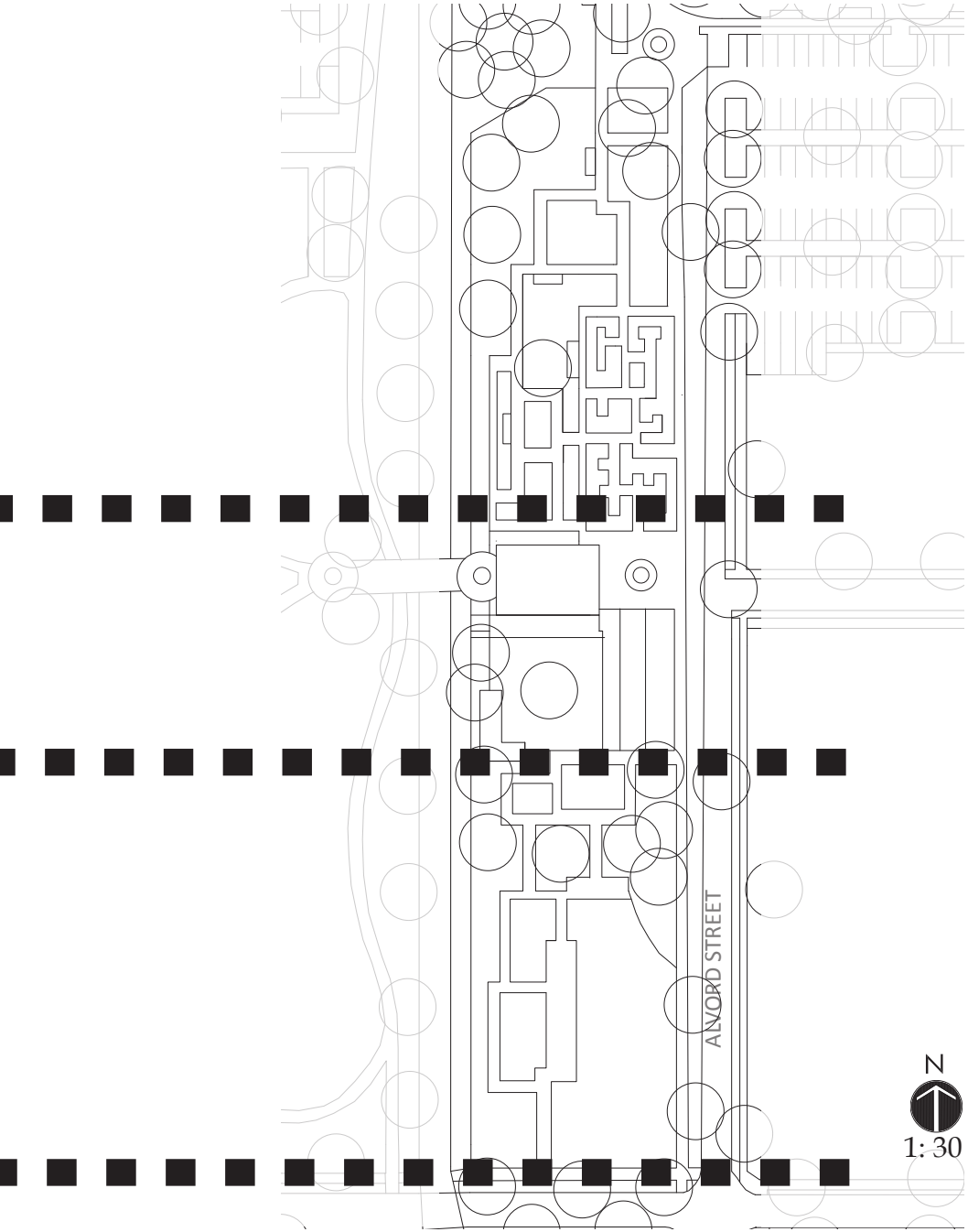


Fig. 76 | **SENSORY PLACEMENT DIAGRAM**

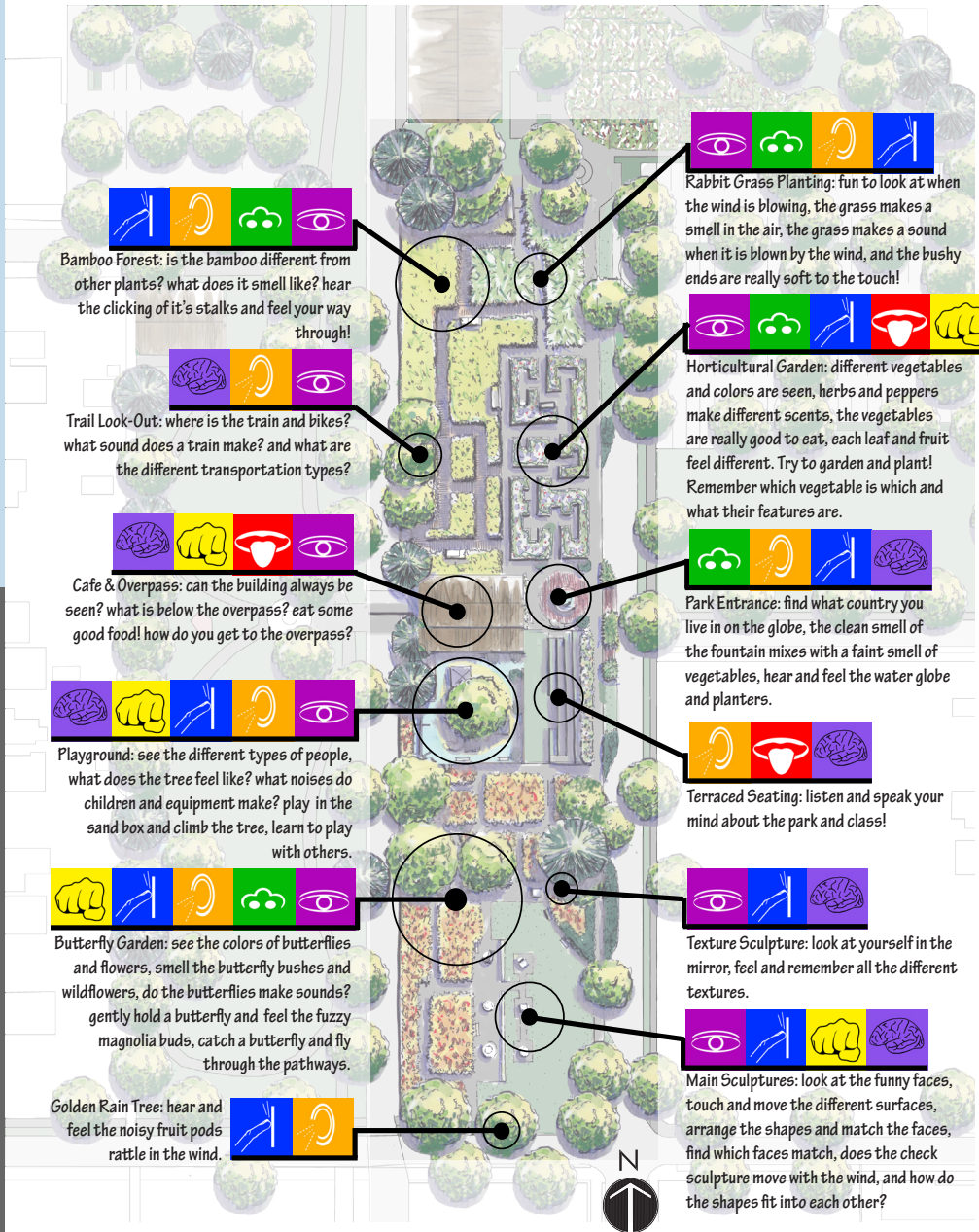


Fig. 77 | **SENSORY MAP** 1: 30

In defining each sense and implementing features for them a question arose asking how children with disabilities would experience each feature, or rather, chose to experience each feature. To answer this question advice was taken from a current Indianapolis Public School (IPS) Elementary Special Education Teacher. The teacher recommended a chart that exemplifies making a choice and then providing graphic symbols for each sense: A nose for smelling, a mouth for tasting/speaking, an eye for seeing, an ear, for hearing, a finger for touching, a hand for doing, and a mind for thinking. A handout (Fig. 94), including the chart (Fig. 78) and sensory map (Fig. 77), will be offered in the park to communicate with a child with disabilities in what they would like to experience.

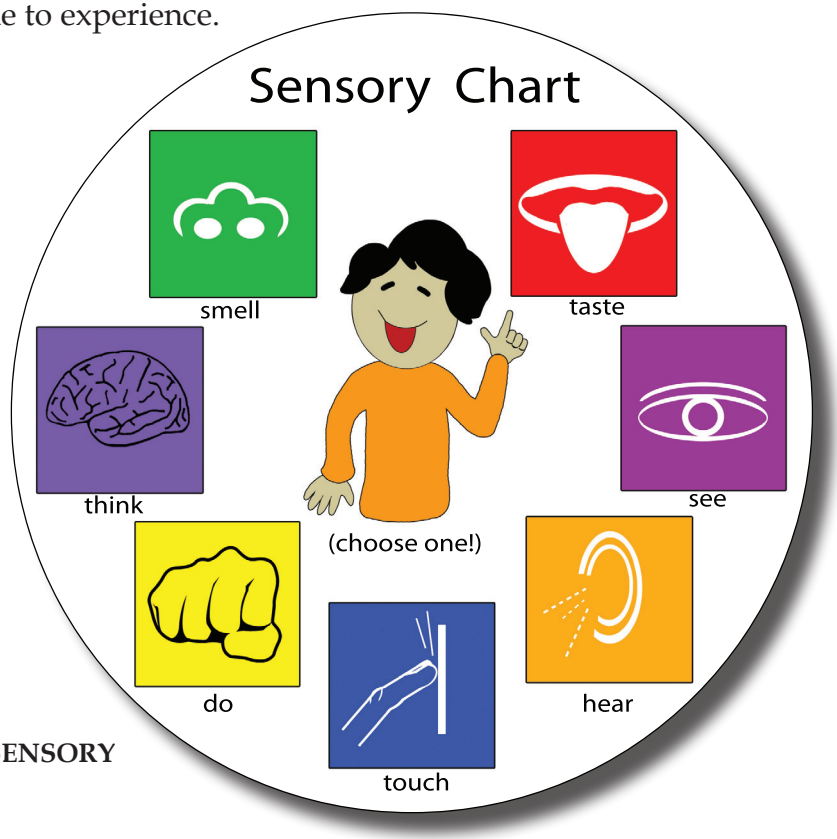


Fig. 78 | **SENSORY CHART**

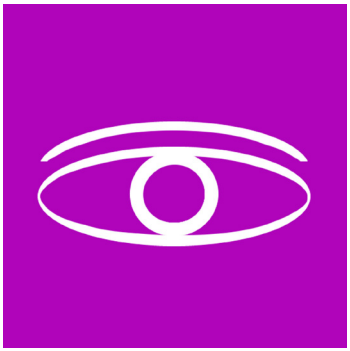


Fig. 1 | **SENSE OF SIGHT ICON**

- colorful play equipment
- way-finding structure
- aesthetic views
- stimulating infrastructure
- different light interaction

Fig.2 | **SENSE OF SMELL ICON**

- fragrant herbs
- fragrant wildflowers
- mass plantings for spatial smell differentiations
- water feature

Fig. 3 | **TASTE/SPEECH**

- edible plants (enabled garden & throughout site)
- nonpoisonous plants schedule
- water fountains
- mini cafe

Fig. 4 | **SENSE OF TOUCH ICON**

- texture walls
- water feature
- sidewalk grasses
- different textured ground materials
- advanced textural plant pallet

Fig. 5 | **SENSE OF HEARING**

- soundful vegetation
- wind sculpture
- train observation area
- vegetated sound barriers

Fig. 79 | **SENSE OF DOING ICON**

- muscle building play equipment
- walking paths
- fine & absolute motor exercises
- open recreational lawn
- play sculptures
- gardening opportunities

Fig. 6 | **SENSE OF THOUGHT ICON**

- puzzle play sculptures
- educational signage
- plant/nature paths
- feet markers
- on-site therapies
- exemplary water treatment

Phase | Park Extensions

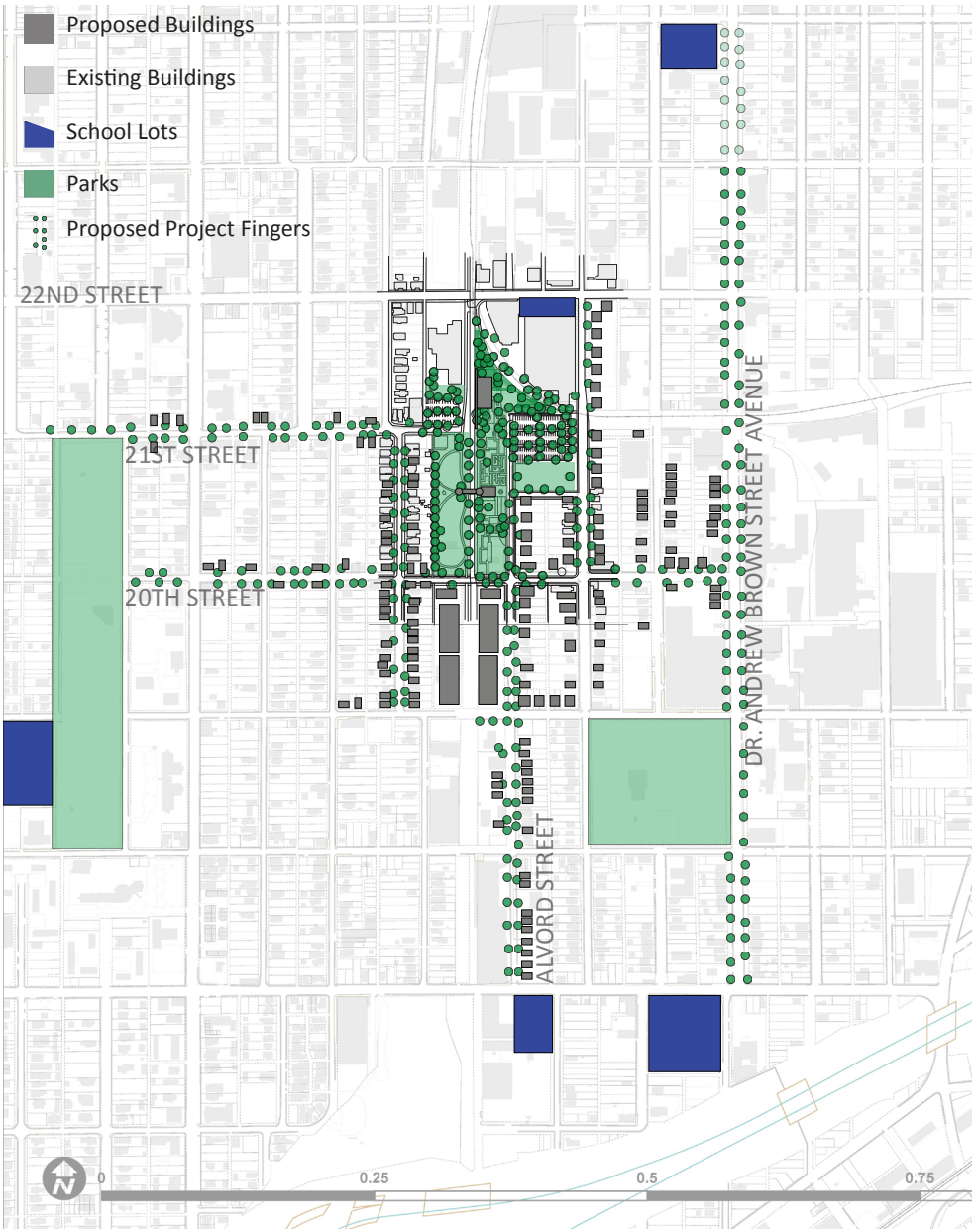
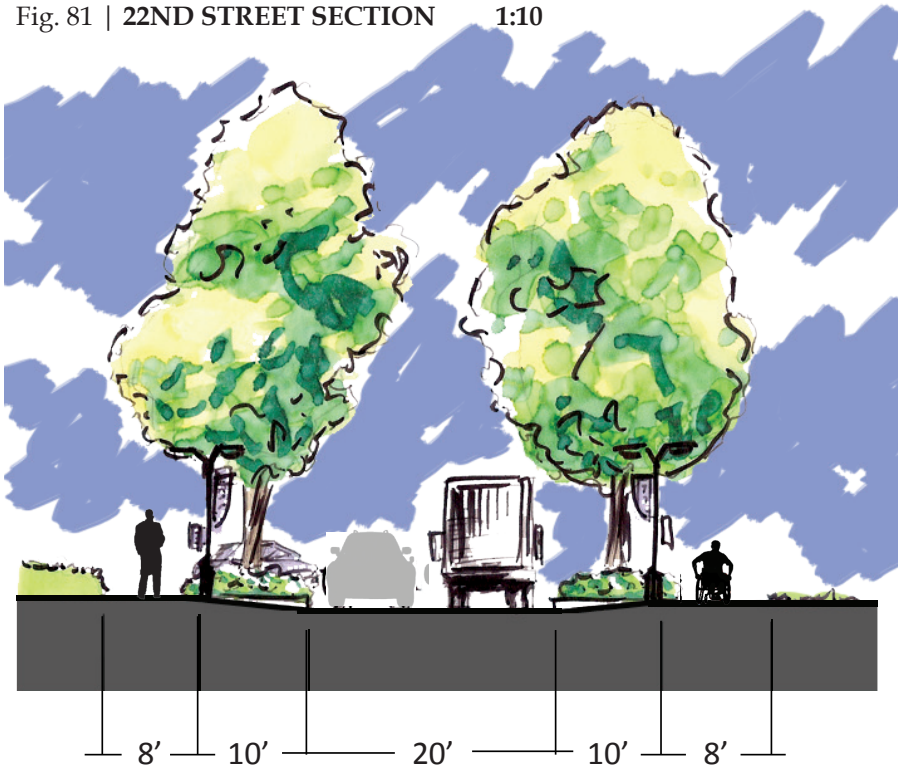


Fig. 80 | **PHASE III SITE PLAN**

Fig. 81 | **22ND STREET SECTION** **1:10**



The third phase is planning for park extensions that will help with traveling on-foot directly from a school or other park to the proposed Kennedy Park. Identifying these connections were important in order to further the accessibility of the park into the surrounding neighborhoods.

Each extension would be specific to that according street. 22nd Street (Fig. 81) for example, has four lanes of traffic with room on either side of the road. This allowed for wider side walks, additional signage and lights, vegetated medians, and maybe narrow areas in the road where pedestrian crossing is more easily made.

Fig. 82 | **DR. ANDREW BROWN AVENUE SECTION** **1:10**

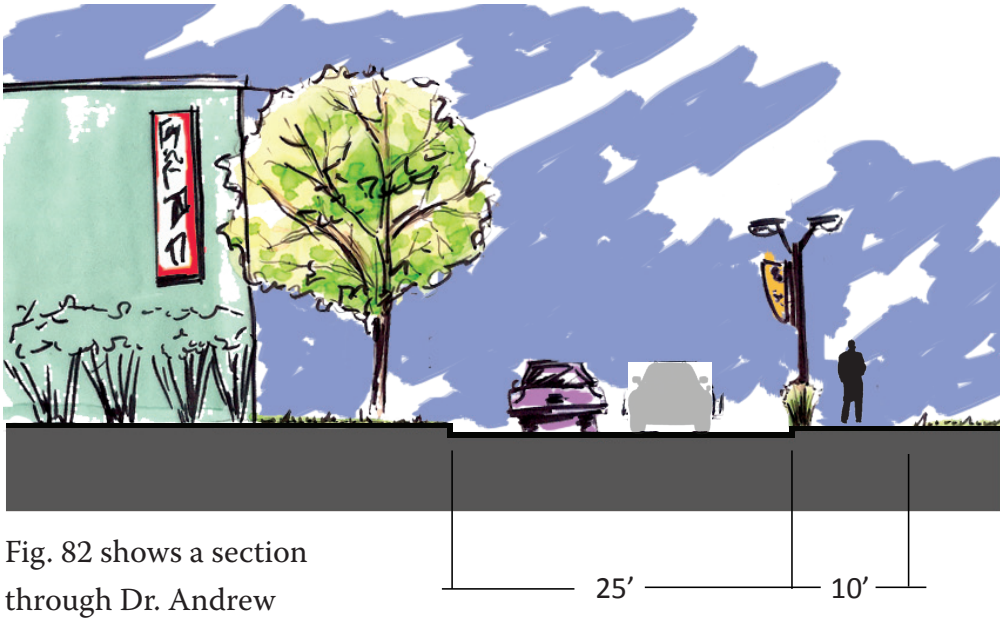
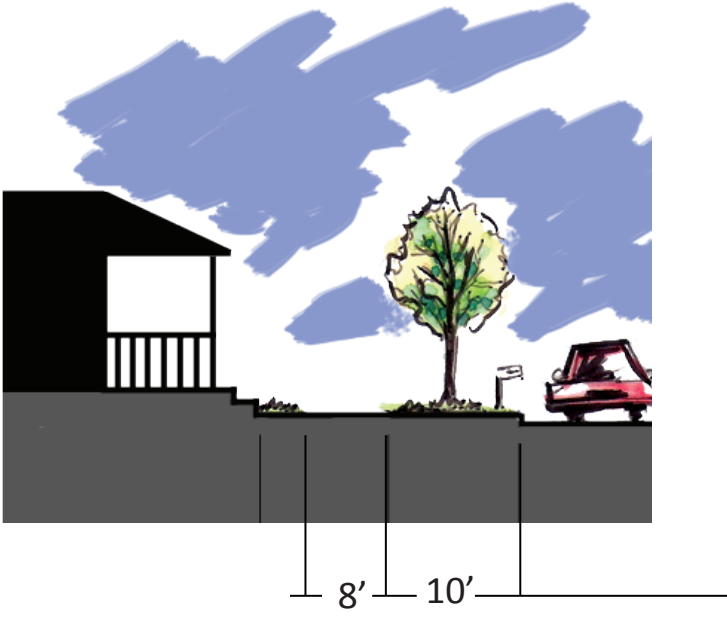


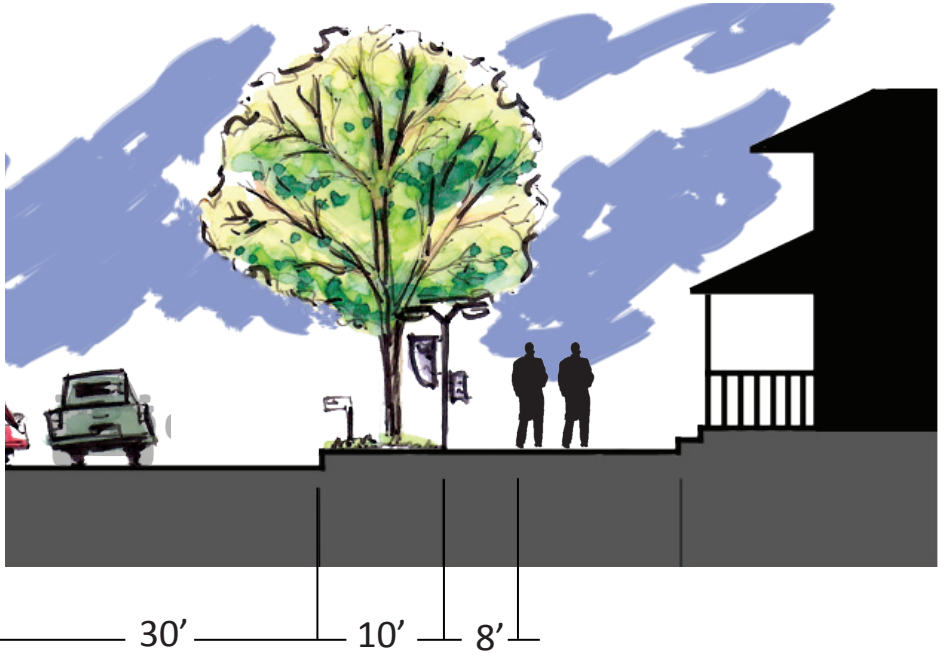
Fig. 82 shows a section through Dr. Andrew Brown Street. Where transitions from building to street, to pedestrian was lacking before, new screening vegetation, building and sidewalk signage, and a road-to-sidewalk median has been added. The changes add for more color and textures as well as bringing the streetscape down to the human scale.



Not all streets have retail or space to either sides of the road, as visible in Fig. 83. This section cut represents residential neighborhoods where creating a front-door environment is very important. Because of this lawn space was accounted for, lighting and signs were implemented, and vegetation based on the housing scale was added.

Also in the surrounding residential environments two-way traffic with roadside parking was needed. Fig. 84 shows 20th street being expanded to a four-laned road with to central driving lanes and two bordering parking lanes. This may not be essential to each residential street in the Park Extensions Plan, so other possibilities should also be reviewed.

Fig. 83 | **20TH STREET SECTION** **1:10**



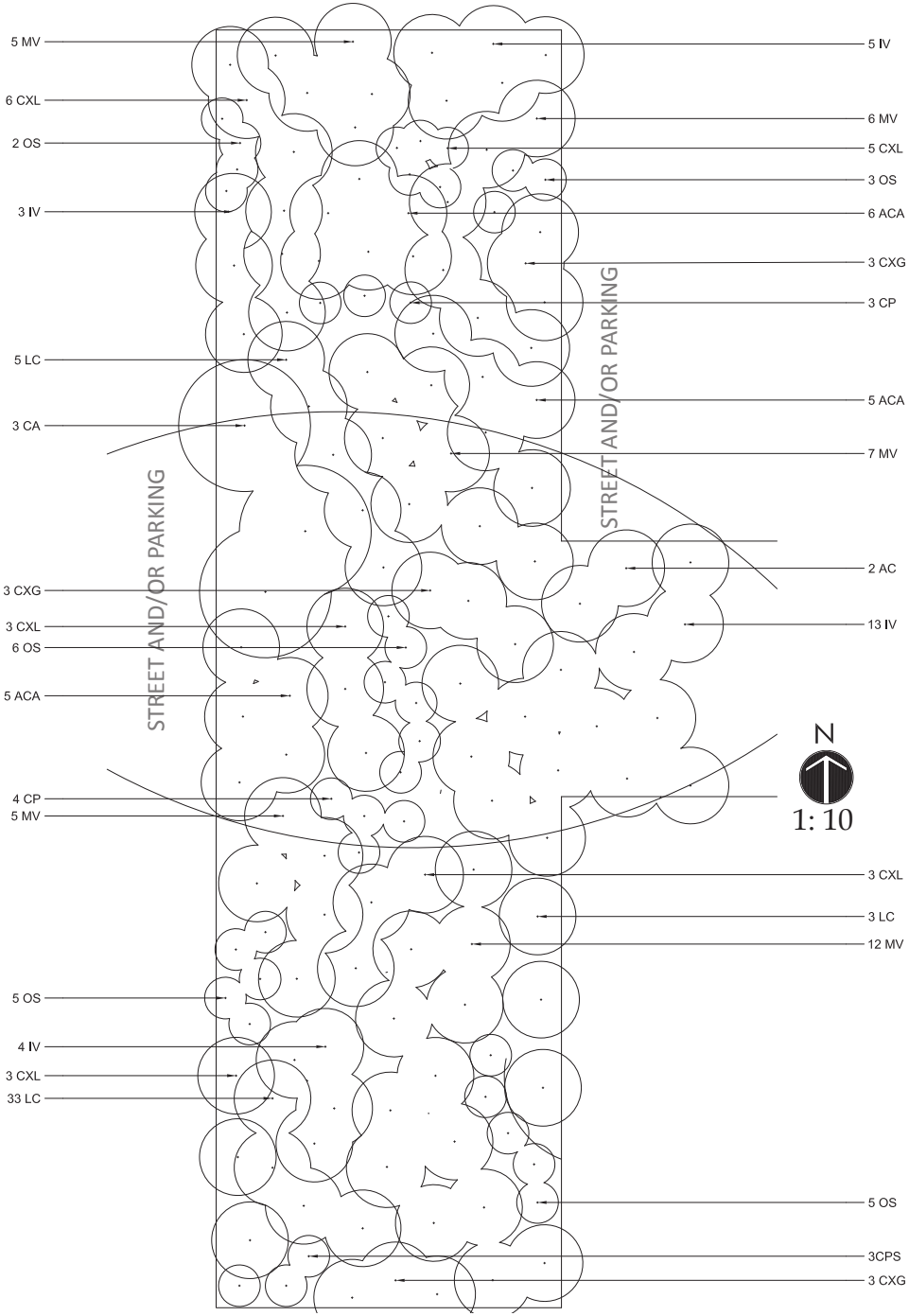


Fig. 84 | **RAIN GARDEN PLANTING PLAN**

SYMBOL	QUANTITY	COMMON NAME	BOTANICAL NAME	SIZE	ZONE	SUN/SHADE	FEATURE	FACTS	SEASON
Rain Garden									
ACA	15	Sweet Flag	Acorus calamus						
CA	3	Tall Bellflower	Campanula americana						
CP	10	Marsh Marigold	Caltha palustris						
CXG	9	Bur Sedge	Carex grayii						
CXL	20	Mop Sedge	Carex lupina						
IV	25	Wild Blue Flag Iris	Iris virginica-shrevei						
LC	12	Cardinal Flower	Lovelia cardinalis						
MV	35	Virginia Bluebells	Mertensia virginica						
OS	20	Sensitive Fern	Onociea sensibilis						

Fig. 85 | **RAIN GARDEN SCHEDULE**

This rain garden (Fig. 84) acts as an exemplary piece for all proposed green parking areas, parking lot medians, and any street-side vegetation. This planting schedule is not a part of the Children's Sensory Park, and therefore not committed to a nonpoisonous or edible plants collection.

A rough drawing on how the rain garden will act is shown below (Fig. 86). The importance of the rain garden coincides with Goal 2 in the Goals and Objectives where on-site water treatment practices will be provided and then act as exemplary educational pieces for surrounding visitors and community members.

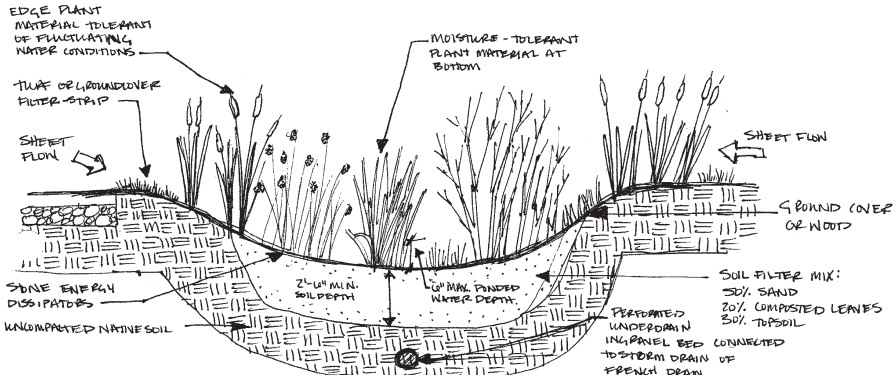


Fig. 86 | **RAIN GARDEN SECTION**

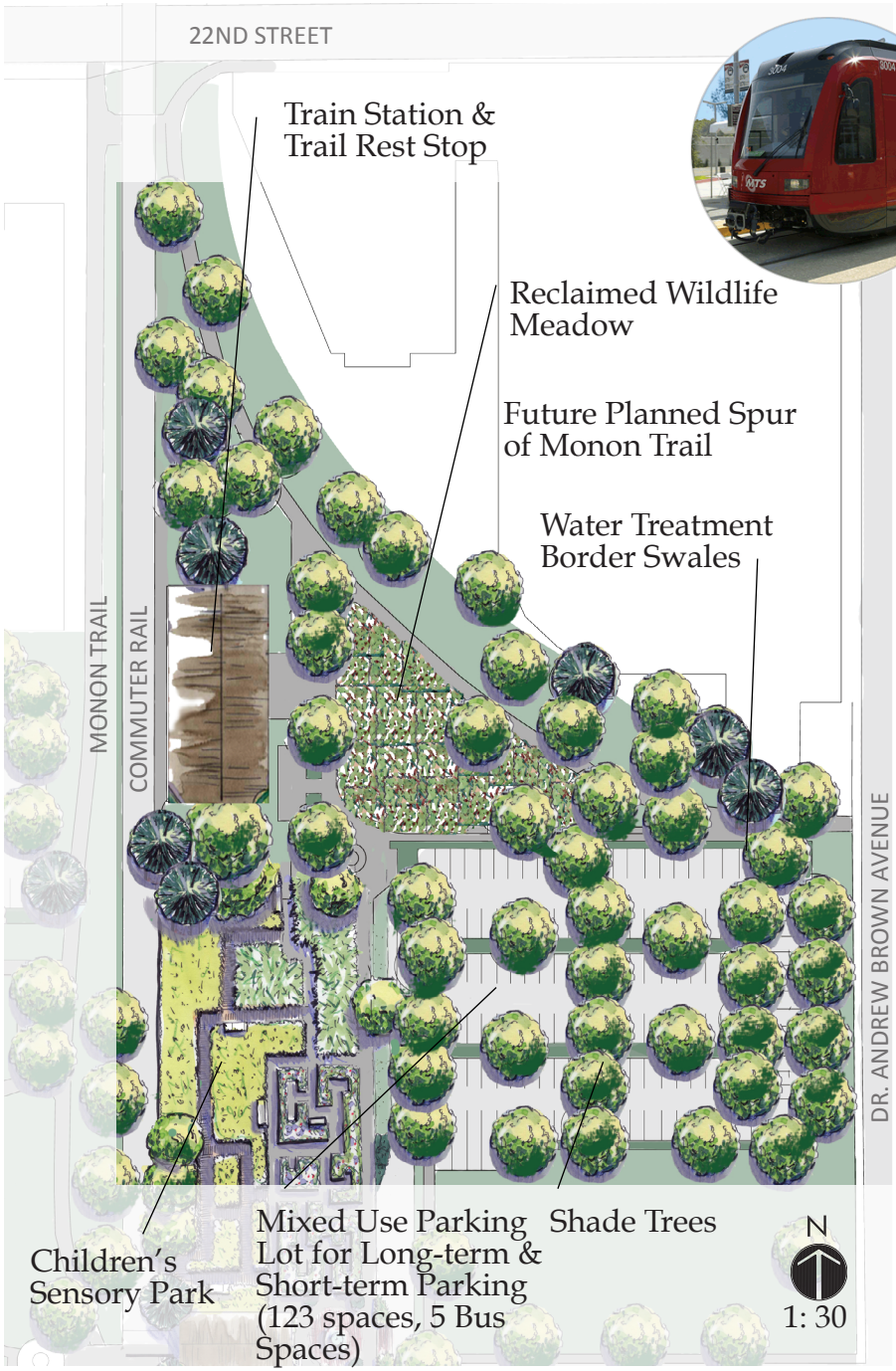


Fig.87 | **PHASE IV SITE PLAN**

Phase IV is the Rest Station Area and the last phase (Fig. 87). This part of the proposed Kennedy Park plans to host a ten to twenty year future plan of a rail station. Future placement of this rail was viewed earlier (Fig. 27-29) and researched to provide a stop within Citizens/ King Neighborhood and the plan the City of Indianapolis has in store.

The station its self is sized to fit a one train track to and from Indianapolis, restrooms, and an interior lobby area. Outdoor lights aligning all pathways, parking, and platform will be implemented to increase the safety of night hour activities (Fig. 88).

Fig. 28 | **COMMUTER TRAIN PROFILE (left)**

Fig. 88 | **TRAIN STATION RENDERING**

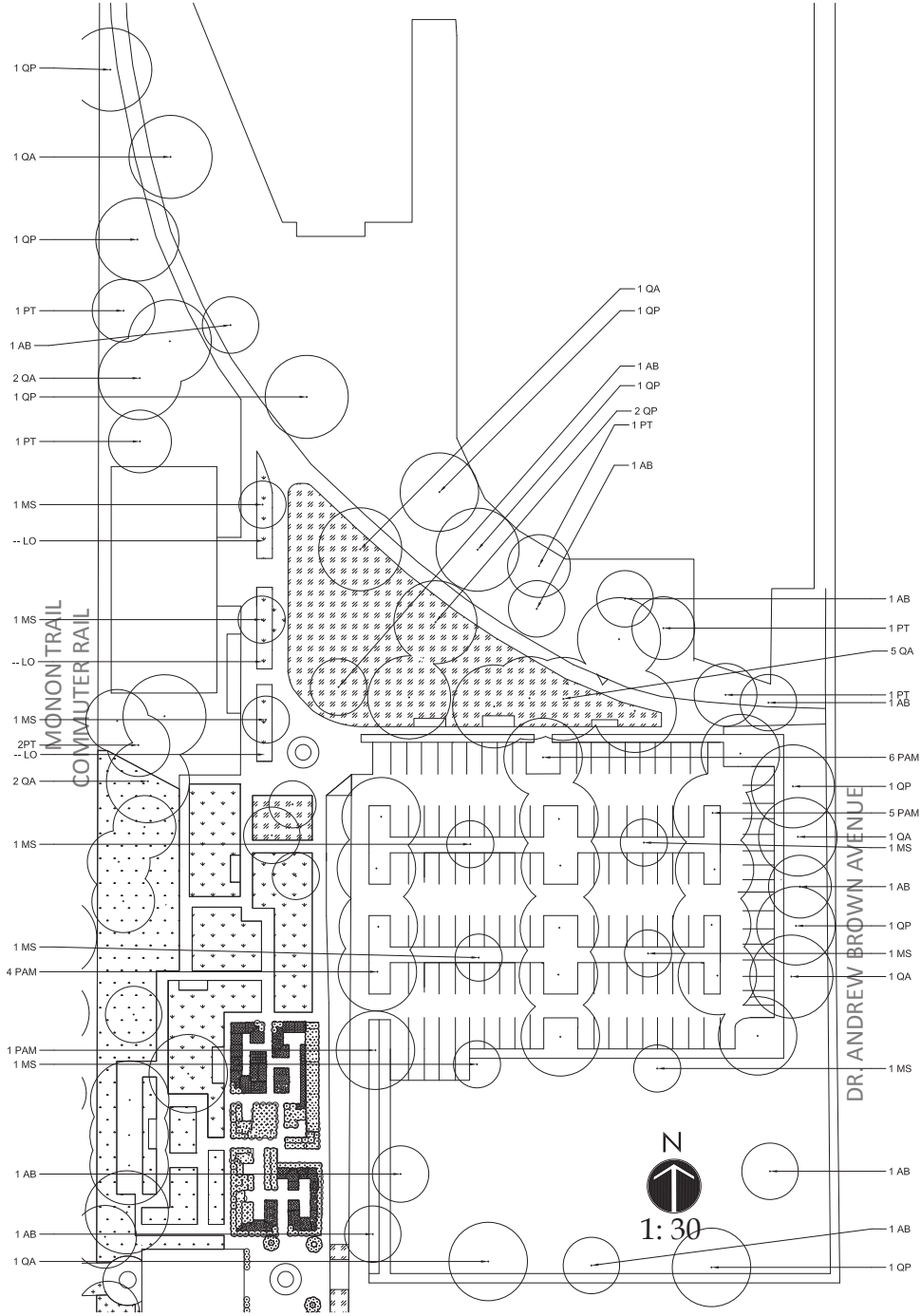


Fig. 89 | **PHASE IV PLANTING PLAN**

SYMBOL	QUANTITY	COMMON NAME	BOTANICAL NAME	SIZE	ZONE	SUN/SHADE	FEATURE	FACTS	SEASON
Ground Covers									
G		Sweet Woodruff	Galiumodoratum		5_8		crushed leaf, stem	new-mown hay fragrance	last Sp - F
GP		Wintergreen	Gaultheria procumbens		3_8		crushed leaf	wintergreen fragrance	warm weather
Spices & Herbs									
CP	55	Parsley	Carum petroselinum			p.shade-shade		used for crowning in ancient Greece. Culinary & medicinal purposes.	April - mid. Aug
LA	41	Common Lavender	Lavendula angustifolia		5_9	full sun	leaves	culinary purposes, bouquets, fragrance	
MS	36	Spearmint	Mentha spicata			sun-p.sun		Medicinal and culinary purposes.	late June - Aug.
MSU	79	Apple Mint	Mentha suaveolens		5_9	full sun	flower	Used in tea. Can be invasive. Attracts bees, butterflies, and birds.	m. summer -e. fall
OVH	52	Greek Oregano	Origanum vulgare hirtum			full sun		culinary purposes	
TV	45	Winter Thyme	Thymus Vulgaris			p.shade-f.sun	leaves	Medicinal and culinary purposes.	May - Aug.
Vegetables (A selection of fruits and vegetables)									
AC	80	Onion	Allium cepa		3_9	sun		Medicinal & culinary purposes.	summer
BOA	23	Collards	Brassica oleracea var. acephala		3_9	sull sun			summer
CA	110	Green Pepper	Capsicum annuum		3_9	sun			summer
CAL	71	Yellow Pepper	Capsicum annum L.		3_9	full sun		Fast growing	summer
CM	5	Connecticut Field Pumpkin	Curcubita Maxima		3_9	full sun		culinary purposes.	spring- summer
CS	90	Cucumber	Cucumis sativus		3_9	full sun		set fruit without pollination	
DC	19	Carrot	Caucus carota		3_9	sun			summer
LE	36	Red Tomato	Lycopersicon exculentum		3_9	sun		determinant not indeterminant	summer
LEL	12	Cherry Red Tomato	Lycopersicon esculentum L.		3_9	full sun			
PS	13	Sweet Pea							
ST	20	Common Potato	Solanum tuberosum		3_9	sun		fast growing	summer
Perennials									
AP	3	Bear's Breeches	Acanthus spinosus		5_9	f.sun-p.shade		exciting flower shape.	June - Aug.
DH	100	Daylily	Hemerocallis		1_11				summer
SB	21	Lamb's Ear	Stachys byzantina		4_10	f.sun-p.shade	leaf	nice soft color and extremely soft foliage.	
TM	100	Alaska Series Nasturtiums	Tropaeolum majus			f.sun-p.shade		variety of colors. Peppery taste. Can spread. Medicinal & culinary purposes	
WM	963Bsq'	Wildflower Mix:	Wildflower Mix:						
Shrubs									
BD	6	Butterfly Bush	Buddleia davidii		5_9		flower	sweet	July - frost
RJ		Nova Rasberry Bush	Rubus idaeus		2_11	full sun		thornless	June - Aug.
Grasses									
EAG		Blue Lymegrass	Elymus arenarius glauca						spr. - lt. summer
FM'NU'	13337sq'	Bamboo	Fargesia murieliae 'New Umbrella'		4_9	f.sun-p.shade		coarse textured, steelblue color.	June - Aug.
LO	9902 sq'	Rabbit's Tail Grass	Lagurus ovatus			sun		nice golden fall color	
PA		Perennial Fountain Grass	Pennisetum alopecuroides					fuzzy rabbit tail-like ends. Good in mass displays	
SP'BV'	515sq'	Needle Grass	Stipa capillata 'Bridal Veil'			full sun		transitional grass, colorful bloom. Good in mass displays	July - winter
Trees									
AB	5	Trident Maple	Acer buergerianum					adaptable to urban conditions. Good for tight locations and urban use. Displays nice red/orange fall color.	
KP	2	Golden Rain Tree	Koelreuteria paniculata		5_9			dried fruit cases make sounds with the wind.	sp. - fall
MS	2	Saucer Magnolia	Magnolia x soulangiana		4_9	sun-p.shade	flowers	attracts bees, butterflies, and/or birds. Provides winter interest	
PAM	1	Cork Tree	Phellodendron amurense		3_8			recommended for buffer strips around parking lots. Good shade tree. Good in urban areas with air pollution, poor drainage, compacted soil, or common drought. Medium growth.	
PC	2	Cleveland Pear	Pyrus calleryana 'Cleveland Select'		5_8	full sun		more blooms than any other flowering pear tree. Rapid growth rate. Upright and canal branching. Purplish-red fall color. Branch structure withstands ice and wind damage. Fruitless and few pest problems. Tolerates urban conditions and heavy soils.	sp. - fall
PT	7	Loblolly Pine	Pinus taeda		6_9	full sun	evergreen	fast growing. Long pin needles. Often used for wind/noise barriers.	
QA	5	Gobbler Sawtooth Oak	Quercus acutissima		5_8	full sun		attracts wild turkeys. Very adabptable. Smaller acorn. Fast growing	
QS	9	Shumard Oak	Quercus shumardi		5_9	full sun	copper-red	growes moderately fast. Handsome shade tree. Tolerates poor soil and drought conditions.	

Fig. 50 | **KENNEDY PARK PLANTING SCHEDULE**

The plants selected for Phase IV are all native plants. By selecting native plants like oak trees and a variety of grasses, wildlife will really be drawn to the site that creates a smooth and vibrant transition from 22nd Street and it's proposed bike trail to the Children's Park.

Fig. 90 | **OAK TREE**

Fig. 91 | **GOLDEN RAIN TREE**

Conclusion

In conclusion of this final thesis project an Urban Sensory Park, Kennedy King Park, was designed. Through research and design practices, the park was created to comfortably facilitate children with disabilities.

The research collection of literature, case studies, interviews of related professionals and site analysis, were organized into four goals best describing the needs and final wants of the park. They were to: *1| Create a park focused on user wants and needs, 2| Create a seasonal community entity, 3| Allow for no seperation between user abilities, and 4| Provide a public healing environment.*

The first goal of *creating a park focused on user wants and needs* was accomplished by researching children and people with disabilities as well as community members. In researching children with disabilities, elementary special education classes were observed, special education teachers were interviewed, and a day deticated to using a wheel chair was accomplished to understand the built environment in relation to people who use wheel chairs on a regular basis. The community members were met while attending a community meeting that briefly included a presentation about the means and objectives involved with the proposed park. It ended with community feedback. The community president and representative belonging to the community's board of directors were also consulted within the last stages of the project.

Goal 2, *Create a seasonal community entity*, was accomplished mostly by the planned activities of the park. The activities include a horticulture garden with a variety of vegetables and herbs

offered six to twelve months of the year. Other examples are the interactive sculptures, walking paths, an advanced plant pallet for the entire Kennedy Park that have uses year round. Other areas like the terraced seating can also be used for multiple purposes year-long.

Goal three, *Allow for no separation between user abilities*, was a very important goal. It represents the problems with accessibility today and accounts for that issue on site. Through observation and a day-in-the-life wheel chair experience (see pg. 102-103), separation between user abilities was discovered in access points, pathways, scale of materials, etc. Because of this separation, people with disabilities do not always have the most comfortable experiences. To solve this problem on site and to create an exemplary model, ground textures are leveled along with appropriate sizes for garden beds, seating, fountains, and pathway widths according to ADA standards.

The fourth and final goal, *Provide a public healing environment*, concludes this project very well. This goal strives to apply characteristics of multiple therapeutic practices into the park. Discovery of wildlife is made by providing opportunities like nature therapy where nature walks can be taken and living with nature is learned. It was was important for Kennedy Park to be a public healing space because of the focused users and their location. The neighborhood is in pain. It is decreasing in size with a very high crime rate. They are in need of a colorful playground that is safe and beneficial to their children's health as well as the adults. Kennedy Park is such a place.

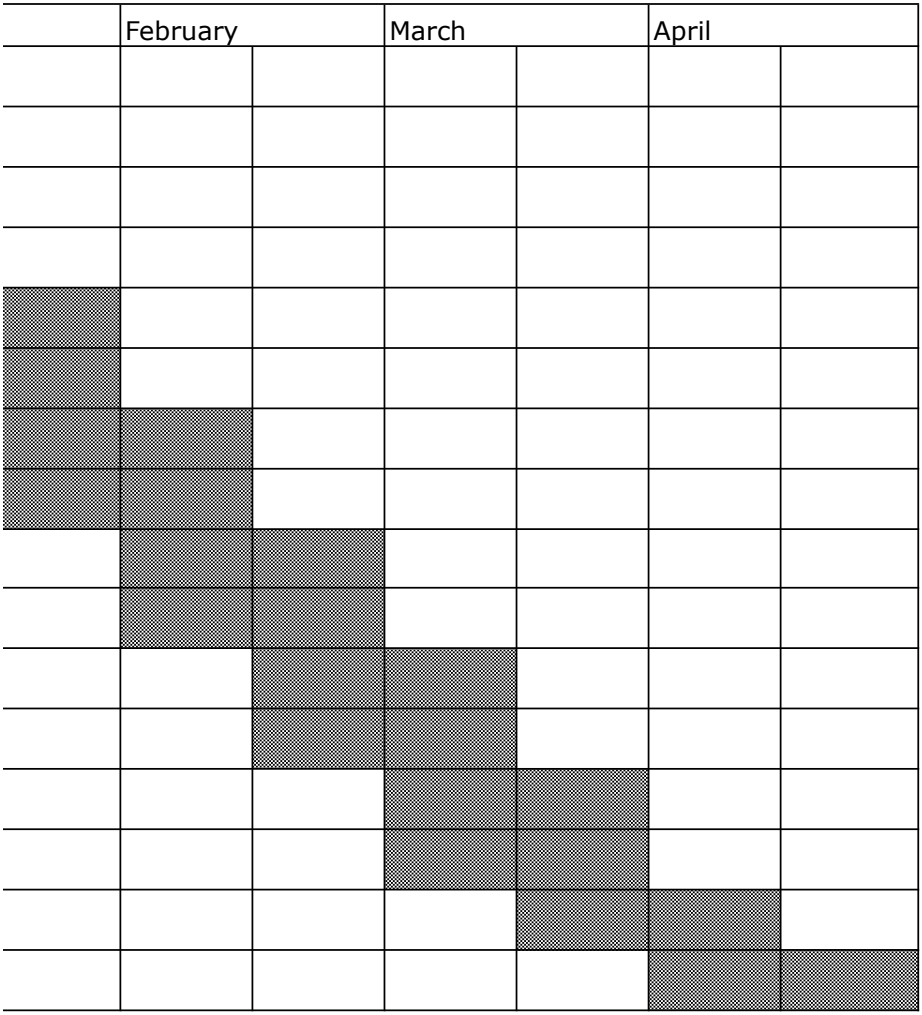
Appendices

Appendix A | Timeline

Task	December		January	
Visit Indianapolis and Muncie parks and document with notes/diagrams/photos				
Interview professionals, community members, and children				
Develop a matrix of information gathered form interviews				
Site visit-photograph site, collect base maps, talk with client				
Collect photographs of successful children's parks				
Create a kit-of-parts for plant pallette				
Refine goals and objectives				
Program activities for the site				
Create concepts to be analyzed (at least 3)				
Schematic design from best or combination of concepts				
Collect design detail examples of types of structures for the site				
Production of Site Plan				
Sections, plans, elevations, character sketches, detail drawings				
Prepare final boards and presentation				
Revise final draft of booklet				
Complete final draft				

Fig. 92 | **PROPOSED PROJECT TIMELINE**

The timeline illustrates the schedule of events and time allotted for each step needed for completion of the final proposed Kennedy Park.


February
March
April

Appendix B | Wheel Chair Journal

Understanding people with disabilities and more specifically wheel chair users can easily be observed and researched. However, due to the importance of knowing this subgroup in order to accurately meet their needs in the proposed fully accessible Kennedy Park, personal experience was needed. Mr. Larry Markle with Ball State Universities Disabilities Department, was kind enough to loan me a wheel chair just for the reason of following through with a one day (April 9, 2010) day-in-the-life experience.

The following segments are broken into times throughout the day in which a video could be taken in order to catch up my status as a wheel chair user.

10AM - I rolled away from my unaccessible house to go to class. I put all of the things I needed that day into my lap, they include; a linear portfolio, laptop case, and backpack. Leaving the house was difficult because of a section of pathways was gravel. I was stuck there for a short time and was very difficult getting out. After getting out of my neighborhood and away from the gravel path, twenty feet had to be reached before the sidewalk had a an accessible ramp. Because of this I held up traffic. In conclusion of this short trip, 30 minutes were needed to get to class from my house, which would usually take five minutes walking distance.

3PM - Throughout the day and after going to a few classes situations and problems arose. It was difficult keeping my things balanced on my lap. Just going for five or ten minutes, I would get hot and eventually develop blisters on my hands.

My shoulder muscles were getting very soar and by the time classes were reached multiple breaks from building-to-building were taken. These reactions are really because of how new using a wheel chair is personally, but everything was leading to the appreciation of motorized wheel chairs.

Building interiors were noticed to be much better than exterior environments. Texture changes outdoors and entry ways proved to be difficult even with the slightest inequality of pavements and thresholds. Measurements and ground textures were very smooth and comfortable inside. One thing to note, is how studio desks are not easily approached or used in a wheel chair.

6PM - Upon meeting with my thesis advisor, Mr. Spangler, a unique emotion and thought was experienced. For the sake of manners or self-preservation, going up a ramp became an important task in order for it to happen before my advisor arrived. This feeling has never been experienced before, for it stemmed sefl-pitty. Feelings like this are most likely common in beginning to use a chair, but are hopefully easy to overcome later on.

Overall using a wheel chair gave me great attention throughout the day and really made me rethink going anywhere. It was a somewhat stressful time, but now I have an idea of what using a wheel chair is really like.

Fig. 93 | **WHEEL CHAIR**

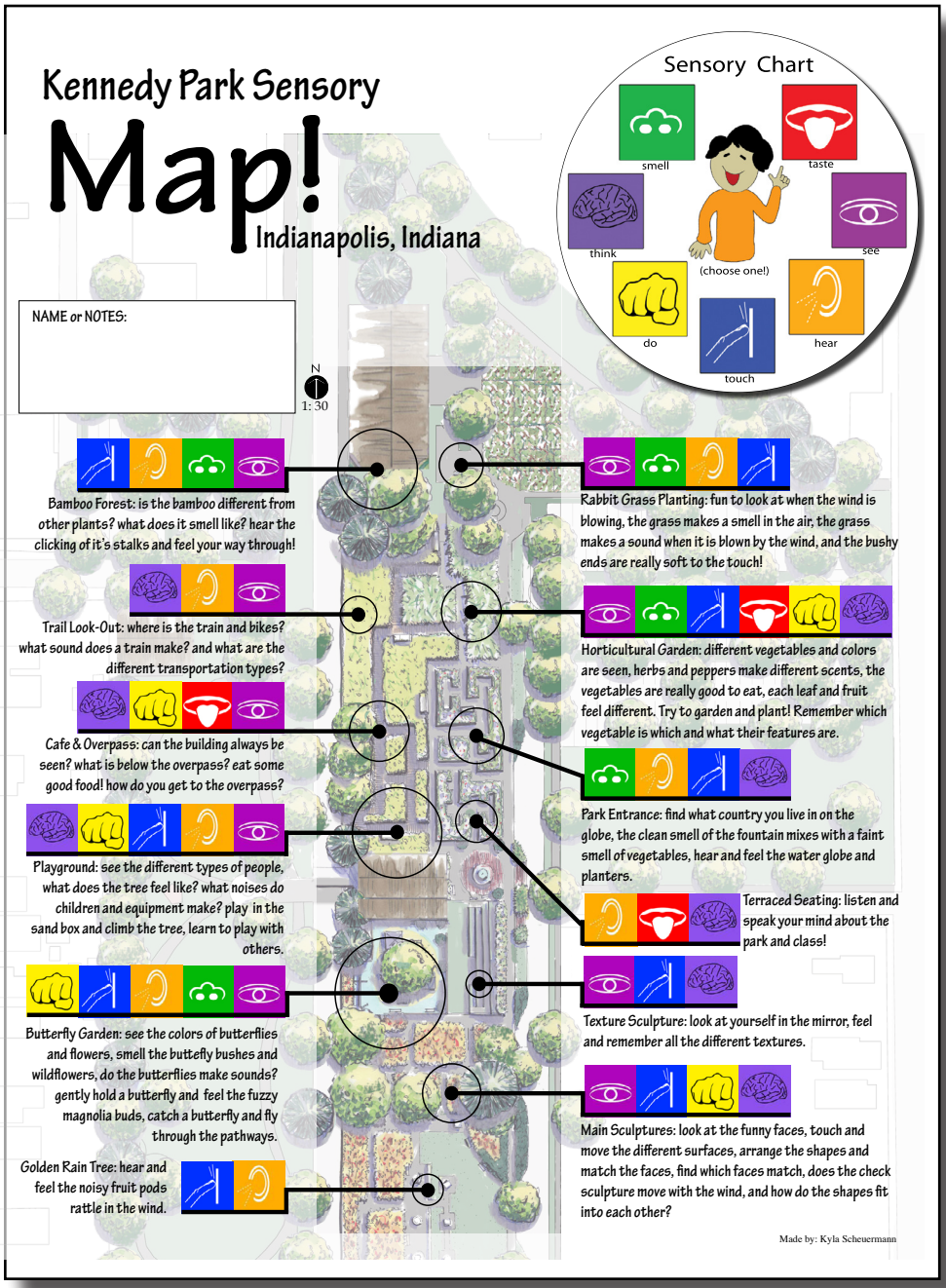


Fig. 94 | **KENNEDY SENSORY MAP HANDOUT**

Pedestrian Regulations

Leashed Pets

Ped-xing

Litter Container

Public Services

Automobiles

Recycle

Health

Bus Stop

Train Stop

Parking

No Parking

No Smoking

Concessions

Eating Place

Drinking Water

Fig. 95 | **STREET & PEDESTRIAN SIGNS**

Appendix F | User Group Needs & Implementation List

Kennedy King Community

- Welcoming/ Noticeable entrances
- Easy to understand signage
- Easy layout and traffic flow
- Seating variety: moveable, sturdy, big & small
- Play equipment for most sizes
- Parking
- Nature interaction
- Planting & harvesting opportunities
- Spatial balance: age, privacy
- Smooth transitions
- Appropriate scales
- Buffers & barriers
- A safe community area

Kennedy King Community Implemented

- Main entries
- Accessible signage: low, to scale, English & Braille
- Pathway loops
- Accessible play equipment
- Roadside Parking
- Nature paths
- Horticultural/Enabled Garden
- Public and private spaces
- Rail-to-park safety barrier
- Backyard-to-park safety buffer
- Vegetated sound buffers
- Low and open planting plan

Wheel Chairs

- Smooth ground textures
- Limited grade changes
- Raised entities
- Accessible play equipment
- 5′ path for 1 WC
- 7′ path for 2 WC
- Muscle strengthening equipment
- lack of mud/soft ground

Wheel Chair Implemented

- Smooth pathways using: grass-crete, cement, brick, recycled rubber
- Raised planting beds
- Raised play equipment
- Ramped playground
- Variety of wide & slim pathways

Walkers & Canes

- Seating
- Smooth & firm pavement with traction
- Limited grade changes
- Railings (if slope > 1:20)

Walkers & Canes Implemented

- Network of resting benches
- Smooth & hard textured pathways
- Soft elevation changes
- Railings (if needed)

User Group List (continued)

Blindness	**Blindness Implemented**
- Change in path edge texture	- Bricked path edges
- Simple pathway plan	- Linear pathways with loops
- Straight & right angled paths	- Few curvilinear paths
- Accessible & readable signage	- Water features, wind chimes, and sound making vegetation
- Sound control	- Sound buffers
- Touch sensory features	- Texture vegetation &
Deaf	**Deaf Implemented**
- Variety of form	- Artistic and interactive sculptures
- Variety of texture	- Seasonal plants list
- Variety of seasonal interest	- Colorful equipment
- Variety of color	- Textured: walls, paths, etc.
Autism	**Autism Implemented**
- Enclosed/secure area	- Enclosed playground with seating near the only entrance/ exit
- Color	
- Sized equipment for all ages	- Sensory Chart & Handout
- Way-finding	

- Colored concrete	- Control vegetation
- Stimulation	- Colorful play equipment
	- Colorful vegetation
	- Big & little swings
	- Slides and playground accessible for adults
	- Central, easy-to-see structure
	- Mass plantings
	- Colored concrete
	- Stimulation by wildlife attraction and interactive installations
Children (ages 5-14)	**Children Implemented**
- Play equipment	- Unique & typical play equipment
- Enclosed area (very young)	- Enclosed playground
- Open lawn	- Recreational lawn for all ages & sizes
- Ground giving material	- Recycled rubber for playground
- Bicycle accessibility	- Bicycle lanes and racks

User Group List (continued)

Guardians/Adults	**Guardians/Adults Implemented**
- Multi-purposeful areas	- Public spaces for multiple uses
- Seating	- Network of seating
- Attractive park	- Outdoor deck area
- Mini-retail structure	- Aesthetic views
- Shareable spaces with children	- Clean & clear layout
- Colored concrete	- Miniature cafe and restrooms
	- Accessible play equipment
	- Colored sidewalk
Trail Users	**Trail Users Implemented**
- Water & restroom access	- Rest stop & entrance/exit
- Change in trail scenery	- Overpass, wall murals, signs, varied vegetation
- Shade	- open & safe trail entrances/ exits
- Easy trail entrance/exit	- Railroad & street crossing warnings
	- descriptive signage

Commuter Rail Users	**Commuter Rail Users Implemented**
- Trail stop	- Train station with platform & seating
- Parking: long & short-term	- One main long & short-term parking lot
- Waiting area	- Rail mural
- Interesting rail features	- Peeks into children's park
	- Surrounding nature park
	- Close-by cafe
Wildlife	**Wildlife Implemented**
- Safety	- Vegetation pockets: nesting, protection, food
- Control	- Control vegetation & fencing
- Food	- Attracting vegetation
	- Side park (for dogs)
	- Barriers to rail & trail

Appendix G| Definitions

ART THERAPY: the creation of art in order to increase awareness of self and others. This in turn may promote personal development, increase coping skills, and enhance cognitive function. It is based on personality theories, human development, psychology, family systems, and art education. Art therapists are trained in both art and psychological therapy (the new medicine).

LIGHT THERAPY: two different categories of treatment, one used in mainstream medical practice and the other in alternative/ complementary medicine. Mainstream light therapy, also photo therapy, includes the use of ultraviolet light to treat psoriasis and other skin disorders, and the use of full spectrum of bright light to treat seasonal affective disorder (SAD).

COLOR THERAPY: also chroma therapy, is based on the premise that certain colors are infused with healing energies. The therapy uses the seven colors of the rainbow to promote balance and healing in the mind and body.

FINE MOTOR SKILLS: the coordination of small muscle movements that occur in the arms, hands, fingers and usually in coordination with the eyes; developmental skills like shoelace, typing, using a computer\mouse, and inserting a key into a lock.

GROSS MOTOR SKILLS: large muscle and body control and coordination; development of skills like head control, rolling, sitting, crawling, standing, and walking...

HORTICULTURAL THERAPY: the engagement of a person in gardening-related activities, to achieve specific treatment goals (AHTA, 2010).

MENTAL DISABILITY: an individual without capabilities of full psychological and social development and/or an individual behind in their typical psychological and social development when compared to others of that age.

MUSIC THERAPY: when music is used to improve both general well-being and to meet the needs of those experiencing stress, pain, communication difficulties, emotional trauma, memory loss, and physical rehabilitation (The New Medicine).

SENSORY FEATURE: any spatial or physical trait that causes bodily senses to be experienced or become inspired for use.

NATURE THERAPY: alternative medical system that focuses on natural remedies and the body's vital ability to heal and maintain itself. Naturopathic philosophy favors a holistic approach and minimal use of surgery and drugs.

PHYSICAL DISABILITY: any individual without complete capability of their person and/or an individual fully dependant upon aide for personal progress.

PLAY THERAPY: a method of psychotherapy with children in which a therapist uses a child's fantasies and the symbolic meanings of his or her play as a medium for understanding and communication with the child.

PUBLIC URBAN PARK: a greenspace open for the relevant community(ies) to use at all times.

Figures List

Figure 52| **CLEVELAND PEAR TREE,** pg. 63. www.rutgersln.com.

Figure 53| **NEEDLE GRASS,** pg. 63. www.junbleseeds.com.

Figure 71| **LAMB'S EAR,** pg. 77. dutchmasternurseriesltd.com

Figure 72| **BAMBOO,** pg. 77. www.willowaynurseries.com.

Figure 74| **LAVENDER,** pg. 79. www.amazon.com

Figure 75| **CUCUMBER PLANT,** pg. 79. upload.wikimedia.org.

Figure 90| **OAK TREE,** pg. 95. www.bb.c.co.uk.

Figure 91| **GOLDEN RAIN TREE,** pg. 95. 2.bp.blogspot.com.

Figure 95| **STREET & PEDESTRIAN SIGNS,** pg. 105. Maven Symbol Signs. www.myartblog.com.

Bibliography

ACS: American Cancer Society. Healing Gardens Nurture the Spirit While Patients Get Treatment: Cancer Survivor Transforms Hospitals with Nature and Whimsy.

ADA: Americans with Disabilities Act of 1990 SUBCHAPTER II. Part A. Sec. 12132. Discrimination. <www.ada.gov/pubs/adastatute08.htm#12132>.

Admin Centre. "Lucas Gardens School." Oct. 12, 2006. <http://www.schoolwebsites.com.au/web/Default.aspx?PageID=1082&SiteID=45>.

AHTA: American Horticultural Therapy Association. "Frequently Asked Questions." The American Horticultural Therapy Association. King of Prussia, PA: 2010. <http://www.ahta.org>.

Alvino, Dona. Center for Autism. Amazingkids, (Fall 2008): Sec. 3, p. 10-13.

Berger, Ronen and John McLeod. "Incorporating Nature Into Therapy: A Framework for Practice." Journal of Systemic Therapies. Vol. 25, No.2 (2006). 80-94.

Bill & Malinda Gates Foundation. "2009 Annual Letter from Bill Gates: Childhood Deaths." Bill & Melinda Gates Foundation. 2009-10. 2 Feb: 2010. <http://www.gatesfoundation.org/annual-letter/Pages/2009-preventing-childhood-deaths.aspx>

C of I: City of Indianapolis. *Citizens/King Park Neighborhood.* Department of Metropolitan Development Division of Planning. 2001 **Conway-Long**, Helene. The Therapeutic Garden. Amazingkids, (Fall 2008): Sec. 3, p. 2-9.

CHHI: Citizens Healthy Homes Initiative. *A Project of Citizen's Multi-Service Center. Concerned Clergy of Greater Indianapolis.* 2003.

Christensen, Keith M. Creating Inclusive Outdoor Play Environments; Designing for Ability Rather than Disability.

Cosco, Nilda G. Well-being by Nature: Therapeutic Gardens for Children. American Society of Landscape Architecture, (Nov. 2005): p. 35-50.

DMD: Department of Metropolitan Development Division of Planning in the City of Indianapolis. *Citizens/King Park Neighborhood Plan.* City of Indianapolis. 2001.

Environments II: A Historical Overview of the Interaction Between Healthcare Environments and Patients. New York: 2002. 1-11.

Family Connect: Common Types of Disabilities." Foundation for the Blind & National Association for Parents of children with Visual Impairments. 2010. 29 Jan. 2010. <www.familyconnect.org/parentsite.asp?SectionID=79&TopicID=366>.

GIS: Geographical Information System

Glover, John and Pamela Wood. Gardens for the Soul: Designing Outdoor Spaces Using Ancient Symbols, Healing Plants, and Feng Shui.

Google Earth.

HU: Harvard University**.** *The Turenscape***.** Harvard University Magazine. Feb. 2010. 2010.

Bibliography (continued)

Herbert, Bonnie B. Design Guidelines of a Therapeutic Garden for Autistic Children: Graduate Thesis. Louisiana State University. May 2003.

"How does therapeutic play work?" Play Therapy International. 1995-2008. 3 Feb: 2010. <www.playtherapy.org>.

Johns Hopkins Children's Center: History - Milestones. The Johns Hopkins University, The Johns Hopkins Hospital, and Johns Hopkins Health System. 1 Feb: 2010. <www.hopkinschildrens.org>.

Kamp, David. Therapeutic Gardens. The Hastings Center, (Aug. 27, 2009): Vol. 27, No. 5, p. 48. <www.jstor.org/stable/3527808>.

Marcus, Clare Cooper. Healing Gardens: Therapeutic Benefits and Design Recommendations

NCID: National Center for Infectious Diseases. CDC: Childhood Diseases. Centers for Disease Control and Prevention. 2007. 2 Feb: 2010. <www.cdc.gov/ncidod/Diseases/children/diseases.htm>.

Rady Children's Specialists of San Diego. Programs & Services: Healthcare Fit for a Child. Rady Children's Hopsital. San Diego, CA. 2010. 4 Feb: 2010. <www.rchsd.org/ourcare/programsservices/index.htm>.

Said, Ismail. Design Considerations and Recommendations for the Development of Children Therapeutic Garden in Malaysian Hospitals. UTM Skudai, Johor. Feb 2003.

Severtsen, Bety. "Healing Gardens."

Smith, Jerry. Health and Nature: The Influence of Nature on Design of the Environment of Care. Columbus, OH. (Oct. 2007): 1-20.

Stockwell, Christine. Natures Pharmacy: A History of Plants and Healing.

Therapet Foundation. What is Animal Assisted Therapy? Therapet Animal Assisted Therapy Foundation. 2010. 30 Jan: 2010. <www.therapet.com/about whatis.php>.

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